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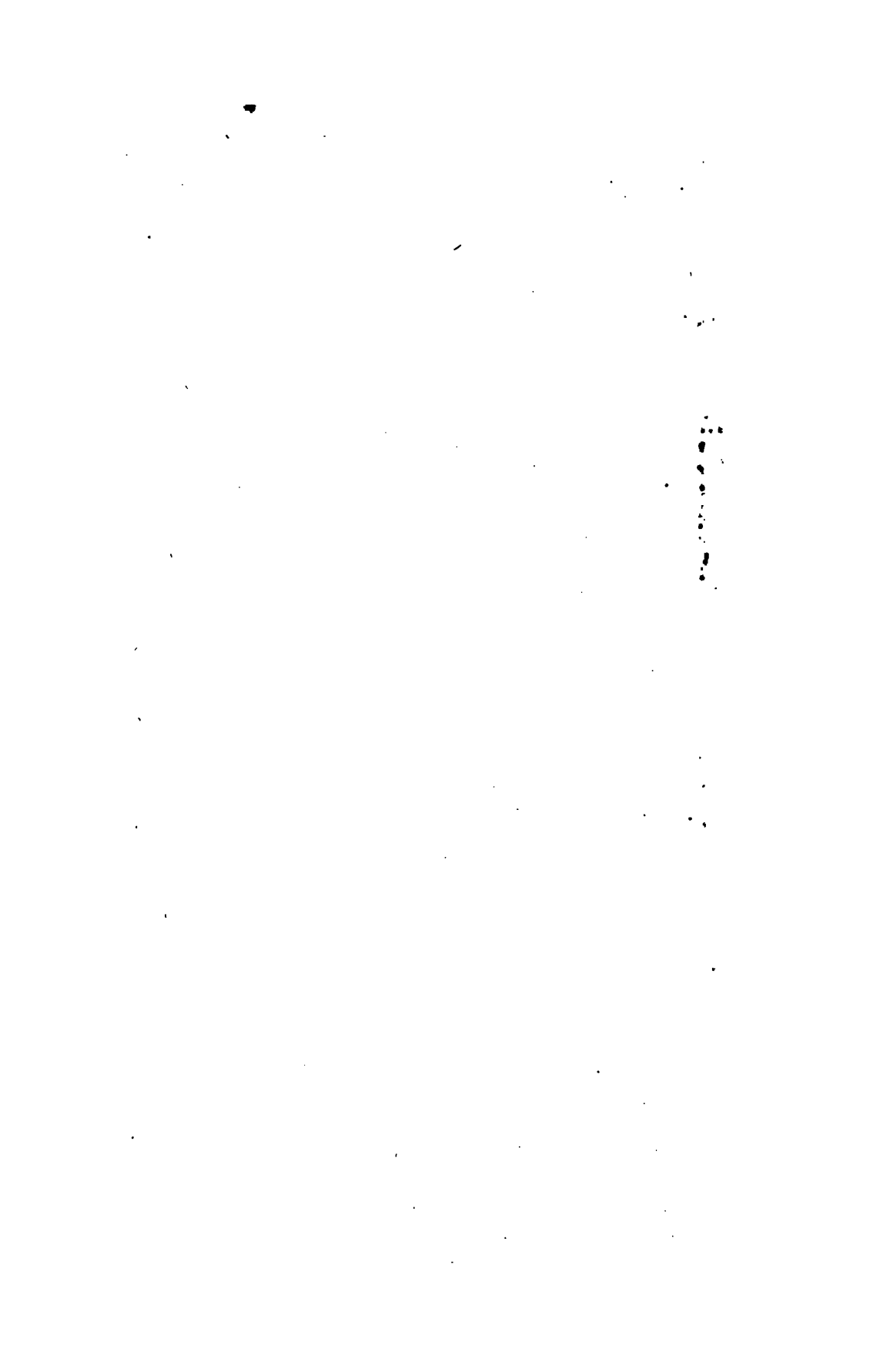












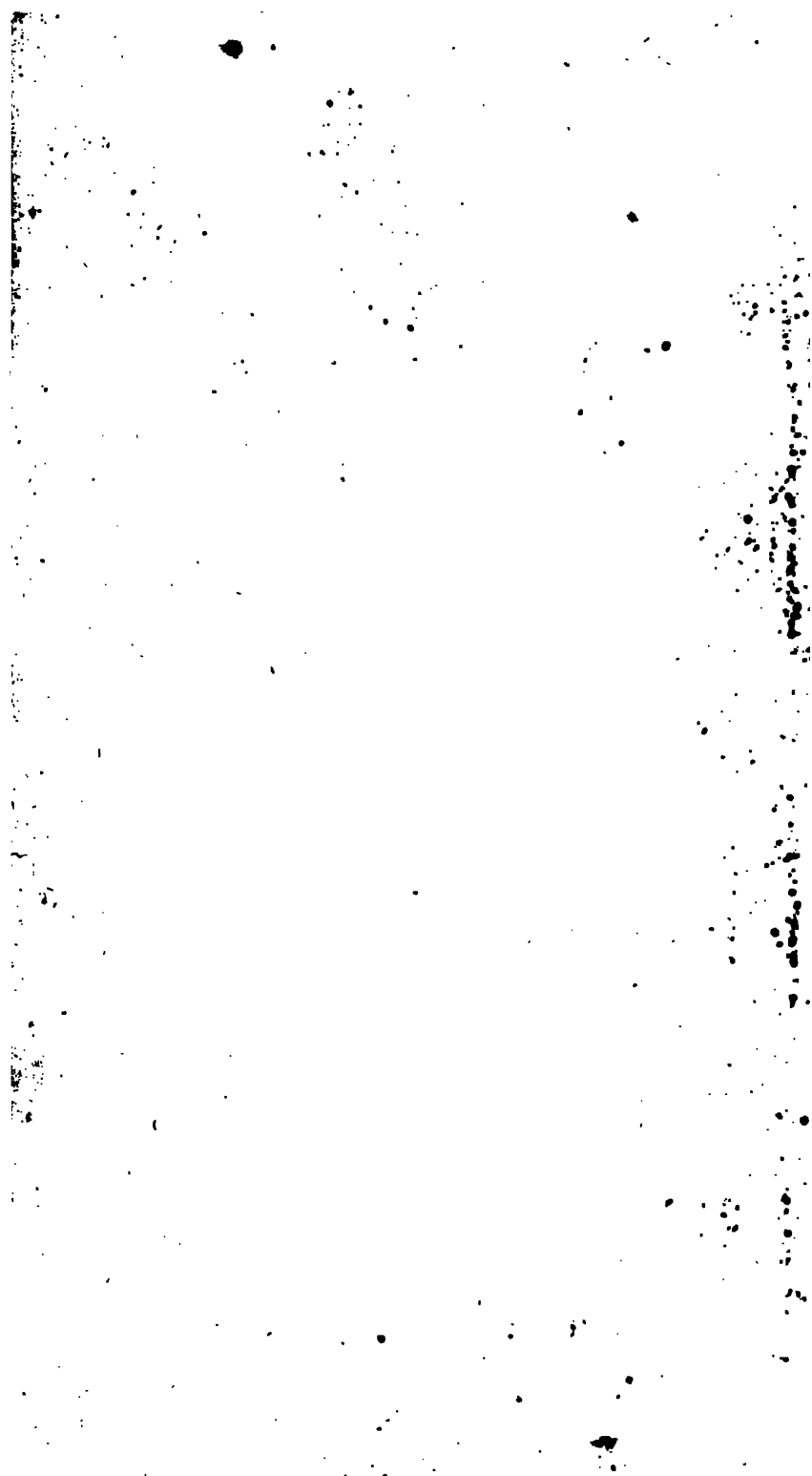
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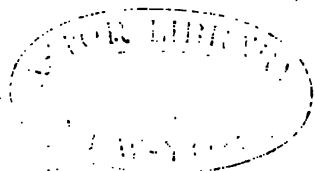
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T H E  
NAUTICAL ALMANAC  
AND  
ASTRONOMICAL EPHEMERIS,  
FOR THE YEAR 1779.

Published by ORDER of the

COMMISSIONERS OF LONGITUDE.



L O N D O N :

PRINTED BY WILLIAM RICHARDSON,  
PRINTER;

AND SOLD BY

JOHN Nourse, in the Strand, and Mess. MOUNT and PAGE  
on Tower-Hill,

Bookfellers to the said COMMISSIONERS.

M DCC LXXVI.

[Price Three Shillings and Six Pence.]

EXTRACT from the Act of Parliament  
concerning the Longitude, made in the  
Fifth Year of the Reign of his present  
Majesty.

**W**HEREAS the Publication of Nautical Almanacs  
constructed by proper Persons, under the Direc-  
tion of the said Commissioners, would greatly contribute  
to make the said Lunar Tables more generally useful;  
It is further Enacted, by the Authority aforesaid, That it  
shall and may be lawful to and for the said Commissioners  
to cause such Nautical Almanacs, or other useful Tables,  
to be constructed, and to print, publish, and vend, or cause  
to be printed, published, and vend, any Nautical Almana-  
cæ or Almanacs, or other useful Table or Tables  
which they, or the major Part of them, shall, from time  
to time, judge necessary and useful, in order to facilitate  
the Method of discovering the Longitude at Sea; and  
Law, Statute, exclusive Privilege, private Chatter, or  
other Custom, to the contrary thereof notwithstanding.

And be it Enacted, by the Authority aforesaid, That no

EXTRACT of an Act for the Repeal of all former Acts concerning the Longitude at Sea, except so much thereof as relates to the Appointment and Authority of the Commissioners thereby constituted, and also such Clauses as relate to the constructing, printing, publishing, vending, and licensing of Nautical Almanacs and other useful Tables; and for the more effectual Encouragement and Reward of such Person and Persons as shall discover a Method for finding the same, or shall make useful Discoveries in Navigation; and for the better making Experiments relating thereto: Made in the Fourteenth Year of the Reign of his present Majesty.

**B**E it Enacted by the KING's Most Excellent Majesty, by and with the Advice and Consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the Authority of the same, That each and every of the said recited Acts (save and except such Clause and Clauses in each or any of them as relate to the Appointment or Authority of all or any of the Commissioners thereby respectively constituted, and also such Clause and Clauses as relate to the constructing, printing, publishing, vending, and licensing of Nautical Almanacs, and other useful Tables) shall, from and after the Twenty-fourth Day of *June* One thousand Seven hundred and Seventy-four, be, and are hereby repealed.

And, for a due and sufficient Encouragement to any Person or Persons who shall discover any Method or Methods for finding the said Longitude, Be it Enacted by the Authority aforesaid, That the First Author or Authors, Discoverer or Discoverers, of each and every such Method or Methods, his or their Executors, Administrators, or Assigns, shall be intitled to and have the Rewards or Sums of Money herein-after mentioned; that is to say, In case the Method proposed shall be, by means of a Time-keeper, the Principles whereof have not hitherto been made public, to the Reward or Sum of Five thousand Pounds,



## EXTRACT, &c.

Pounds, if such Method determines the said Longitude to One Degree of a great Circle, or Sixty geographical Miles; to the Reward or Sum of Seven thousand Five hundred Pounds, if it determines the same to Two Thirds of that Distance; and to the Reward or Sum of Ten thousand Pounds, if it determines the same to One Half of the said Distance: Which respective Rewards shall be due and paid when such Method shall have been sufficiently tried by the following Experiments and Voyages to be made and performed by such Persons, and under such Restrictions, as the said Commissioners for the Discovery of Longitude at Sea respectively constituted by the above-recited Acts, or the major Part of them, shall think fit to appoint and direct; (that is to say), When and so soon as Two or more Time-keepers of the same Construction shall have been tried at the same Time, for the Space of Twelve Months, at the Royal Observatory at *Greenwich*, then in Two Voyages round the Island of *Great Britain*, in contrary Directions, and in such other Voyages to different Climates as the said Commissioners shall think fit to direct and appoint; and after their Return from such Voyages, or any of them, for such longer Time, at the said Observatory, not exceeding Twelve Months, as the said Commissioners shall judge necessary; and also when and so soon as the said Commissioners, or Two Thirds of them at the least, shall, after such Experiments and Voyages have been made and performed as aforesaid, have declared and determined that such Method is generally practicable and useful, and sufficiently exact to determine the Longitude at Sea within the Degrees or Limits aforesaid, in all Voyages for the Space of Six Months, (Impediments from cloudy and hazy Weather excepted); and also when and so soon as the Principles and Practice of such Method are fully discovered and explained to the Satisfaction of the said Commissioners, or Two Thirds of them at least; and such Author or Authors, Discoverer or Discoverers, shall have delivered up and assigned over to the said Commissioners, for the Use of the Public, the absolute Property of such Time-keepers as shall have been  
tried

## EXTRACT, &c.

tried by such Experiments and Voyages as aforesaid, together with all Plates, Descriptions, Theories, and Explanations belonging or relating to the same, and which shall contain the Whole of such Discovery of the Longitude; and in case the Method proposed shall be by means of improved Solar and Lunar Tables, then and in such Case the Author or Authors of such improved Solar and Lunar Tables, their Executors, Administrators, or Assigns, shall be intitled to and have the Reward or Sum of Five thousand Pounds, if such Solar and Lunar Tables shall prove sufficiently exact to shew the Distance of the Moon from the Sun and Stars in the Heavens within Fifteen Seconds of a Degree, answering to about Seven Minutes of Longitude, after making an Allowance of Half a Degree for the Errors of Observation; and when it shall appear to the Satisfaction of the said Commissioners, or Two Thirds of them at least, that such Tables are constructed intirely upon the Principles of Gravitation laid down by Sir *Iaac Newton* (except with respect to those Elements which must necessarily be taken from astronomical Observations), and also when the Truth of such Tables shall have been further confirmed and proved by Comparison with a Series of astronomical Observations made during a Period of Eighteen Years and a Half, which is deemed the Period of the Irregularities of the Lunar Motions; which Reward shall be due and paid, when the said Commissioners, or Two Thirds of them, at least, shall have declared and determined, that such Tables are sufficiently exact to shew the Distance of the Moon from the Sun and Stars in the Heavens, within the Limits above-mentioned; and also when the Author or Authors of such improved Solar and Lunar Tables, his or their Executors, Administrators, or Assigns, shall have delivered up and assigned over to the said Commissioners, for the Use of the Public, the absolute Right and Property to and in the same, together with the Theory relating thereunto; and in case any other Method shall be proposed for finding the Longitude at Sea besides those before-mentioned, that then and in such Case the first Author or Authors, Discoverer or Discoverers, of  
any

## EXTRACT, &c.

any such Method, his or their Executors, Administrators, or Assigns, shall be intitled to and have the Reward or Sum of Five thousand Pounds, if it shall determine the said Longitude within One Degree of a great Circle or Sixty geographical Miles; to the Reward or Sum of Seven thousand Five hundred Pounds, if it shall determine the same to Two Thirds of that Distance; and to the Reward or Sum of Ten thousand Pounds, if it shall determine the same to One Half of the same Distance; which respective Rewards shall be due and paid, so soon as the said Commissioners, or Two Thirds of them, at least, shall, after proper Trial have been made by their Appointment and Direction, have determined that such Method shall be generally practicable and useful for finding the Longitude at Sea within the respective Limits above mentioned.

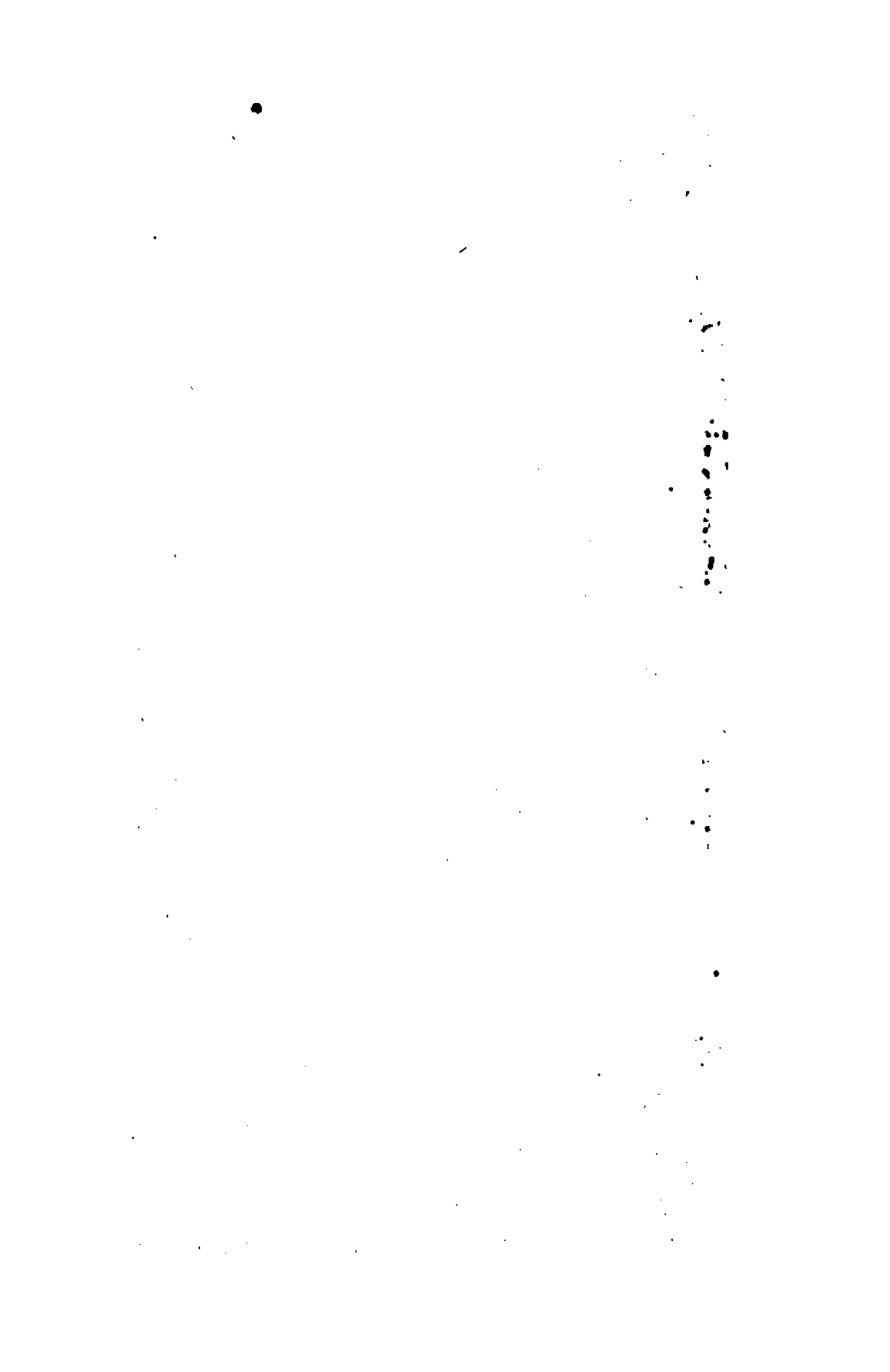
And be it further Enacted, by the Authority aforesaid, That when and so soon as any such Method or Methods, for the Discovery of the said Longitude, shall be tried, as before-mentioned, and found practicable and useful at Sea, and sufficiently exact to determine the Longitude within any of the Degrees or Limits aforesaid, the said Commissioners, or Two Thirds of them, shall certify the same, under their Hands and Seals, to the Commissioners of the Navy for the Time being, together with the Name or Names of the Person or Persons who shall be the Author or Authors of such Method or Methods; and upon the Receipt of such Certificate, the said Commissioners of the Navy are hereby authorized and required to make out a Bill or Bills upon the Treasurer of the Navy for the respective Sum or Sums of Money to which the Author or Authors of such Proposal, his or their Executors, Administrators, or Assigns, shall be intitled by virtue of this Act; which Sum or Sums the said Treasurer is hereby required to pay to the said Author or Authors, their Executors, Administrators, or Assigns accordingly, out of any Money that may be in his Hands unapplied to the Use of the Navy, according to the true Intent and Meaning of this Act.

And

## EXTRACT, &c.

And be it further Enacted by the Authority aforesaid, That the said Commissioners for the Discovery of Longitude at Sea, or any Five or more of them, shall have full Power and Authority to hear and receive any Proposal or Proposals that shall be made to them for discovering the said Longitude, or for making any other useful Improvement in Navigation; and in case the said Commissioners, or any Five or more of them, shall be so far satisfied of the Probability of any such Discovery or Improvement as to think it proper to cause Experiments to be made thereof, they shall certify the same, together with the Names of the Author or Authors of such Proposal or Proposals, under their Hands and Seals, to the Commissioners of the Navy, who are hereby authorized and required to make out a Bill or Bills upon the Treasurer of the Navy for any Sum or Sums of Money as the said Commissioners for the Discovery of Longitude at Sea, or any Five or more of them, shall think necessary for making such Experiments; which Sum or Sums the Treasurer of the Navy is hereby required to pay immediately to such Person or Persons as shall be appointed by the said Commissioners to make those Experiments out of any Money which shall be in his the said Treasurer's Hands unapplied as aforesaid.

And be it further Enacted, by the Authority aforesaid, That if any Person or Persons shall make any Discovery for finding the Longitude at Sea, which, though not of so great Use as to be intitled to any of the great Rewards above specified, shall nevertheless be adjudged by the said Commissioners for the Discovery of Longitude at Sea, or the major Part of them, to be of considerable Use to the Public, or shall make any other Discovery or Discoveries, Improvement or Improvements, useful to Navigation; then, and in such Case, such Person or Persons, his or their Executors, Administrators, or Assigns, shall, from time to time, have and receive such less Reward or Sum or Sums of Money as the said Commissioners, or the major Part of them, shall think reasonable; and certify accordingly, under their Hands and Seals, to the Commissioners of the Navy,





By the COMMISSIONERS appointed by Acts of Parliament for the Discovery of the Longitude at Sea; and for examining, trying, and judging of all Proposals, Experiments, and Improvements relating to the same.

WHEREAS we have employed proper Persons to compute Nautical Almanacs or Astronomical Ephemerides for the Years 1779 and 1780, which will greatly contribute to make the Lunar Tables constructed by the late Professor MAYER of *Gottingen* (which you have already printed with our Authority) more generally useful; and whereas we think fit to employ you to print the said Nautical Almanacs and Astronomical Ephemerides: We do therefore, in pursuance of the Power vested in us by Act of Parliament, hereby license, authorize, and empower you to cause the same to be printed, together with such other useful Tables for facilitating the Method of discovering the Longitude at Sea, as shall be delivered to you by the Reverend Mr. NEVIL MASKELYNE, his Majesty's Astronomer Royal at *Greenwich*; and for so doing this shall be your Warrant. Given under our Hands and Seals the 1st Day of *March* 1777.

To Mr. WILLIAM  
RICHARDSON,  
Printer in *Salisbury-*  
*court, Fleet-street.*

SANDWICH	(L.S.)
FL. NORTON	(L.S.)
C. KNOWLES	(L.S.)
C. HARDY	(L.S.)
J. PRINGLE	(L.S.)
N. MASKELYNE	(L.S.)
T. HORNSBY	(L.S.)
J. SMITH	(L.S.)
E. WARING	(L.S.)
A. SHEPHERD	(L.S.)
P. STEPHENS	(L.S.)
M. SUCKLING	(L.S.)
J. SMITH	(L.S.)

By Order of the Commissioners,

JOHN IBBETSON, Secretary.

b

By

By the COMMISSIONERS appointed by Acts of Parliament for the Discovery of the Longitude at Sea; and for examining, trying, and judging of all Proposals, Experiments, and Improvements relating to the same.

**W**HEREAS we think fit to employ you to publish and vend, and to cause to be published and vended, the Nautical Almanacs or Astronomical Ephemerides for the Years 1779 and 1780, together with any other useful Tables for facilitating the Method of discovering the Longitude at Sea, which will be printed under our Authority, by Mr. WILLIAM RICHARDSON of *Salisbury-court, Fleet-street*: We do therefore, in pursuance of the Power vested in us by Act of Parliament, hereby license, authorize, and empower you to publish and vend, and to cause to be published and vended, the said Nautical Almanacs or Astronomical Ephemerides, together with the other useful Tables above-mentioned. For which this shall be your Warrant. Given under our Hands and Seals the 1st Day of *March 1777*.

To Mr. JOHN NOURSE,  
Bookseller in the *Strand*.

SANDWICH (L.S.)  
EL. NORTON (L.S.)  
C. KNOWLES (L.S.)  
C. HARDY (L.S.)  
J. PRINGLE (L.S.)  
N. MASKELYNE (L.S.)  
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E. WARING (L.S.)  
A. SHEPHERD (L.S.)  
PH. STEPHENS (L.S.)  
M. SUCKLING (L.S.)  
J. SMITH (L.S.)

By Order of the Commissioners,

JOHN IBBETSON, Secretary.

☞ A Licence was also granted at the same Time, to the like Effect, to Mess JOHN MOUNT and THOMAS PAGE, Stationers on *Tower-hill*.

P R E

## P R E F A C E.

**T**HE Commissioners of Longitude, in pursuance of the Powers vested in them by Act of Parliament, present the Publick with the NAUTICAL ALMANAC and ASTRONOMICAL EPHEMERIS for the Year 1779, being the Thirteenth Impression, to be continued annually; a Work which must greatly contribute to the Improvement of Astronomy, Geography, and Navigation. This EPHEMERIS contains every Thing essential to general Use that is to be found in any Ephemeris hitherto published, with many other useful and interesting Particulars never yet offered to the Publick in any Work of this Kind. The Tables of the Moon had been brought by the late Professor MAYER of Gottingen to a sufficient Exactness to determine the Longitude at Sea, within a Degree, as appeared by the Trials of several Persons who made Use of them. The Difficulty and Length of the necessary Calculations seemed the only Obstacles to hinder them from becoming of general Use: To remove which this EPHEMERIS was made; the Mariner being hereby relieved from the Necessity of calculating the Moon's Place from the Tables, and afterwards computing the Distance to Seconds by Logarithms, which are the principal and only very delicate Part of the Calculus; so that the finding the Longitude by the Help of the EPHEMERIS is now in a Manner reduced to the Computation of the Time, an Operation equal to that of an Azimuth, and the Correction of the Distance on account of Refraction and Parallax, which is also rendered very easy by either of the Two Methods invented by Mr. LYONS and Mr. DUNTHORNE, and published among the Tables requisite to be used with the EPHEMERIS; or by  
either



## P R E F A C E.

either of the Two Methods annexed to the EPHEMERIS of 1772, being both Improvements of the Method which I formerly published in the BRITISH MARINER'S GUIDE and PHILOSOPHICAL TRANSACTIONS, the First by myself, and the Second by Mr. GEORGE WITCHELL; but still more so by the GENERAL TABLES for correcting the apparent Distance of the Moon and a Star or the Sun from the Effects of Refraction and Parallax, computed at great Expence by Order of the Commissioners of Longitude, and published under the Care of Dr. SHEPHERD, Plumian Professor of Astronomy and experimental Philosophy at CAMBRIDGE, in 1772.

By Desire of the Commissioners of Longitude, I drew up the Explanation and Use of the Articles contained in the EPHEMERIS, and the Instructions, with Examples, for finding the Longitude at Sea by the Help of the same. I also collected and calculated the Sixteen First Pages of Tables requisite to be used with the EPHEMERIS, and computed the Table of proportional Logarithms, which seemed to me absolutely necessary to clear this Method of any remaining Difficulty; and added Explanations of all the Tables, and a Correction, p. 49 and 50, which may be applied by the Curious to the Effect of Refraction on the Moon's Distance from a Star, found by Mr. LYONS, or any other Method, on account of the Barometer and Thermometer.

All the Calculations of the EPHEMERIS relating to the Sun were made from Mr. MAYER's last manuscript Tables, received by the Board of Longitude after his Decease, which have been printed under my Inspection, and published in 1770; but the Calculations of the Moon were made in this EPHEMERIS, for the third time, from  
new

## P R E F A C E.

new Tables, improved from *MAYER's* Tables, composed by *Mr. CHARLES MASON*, under my Direction, from Calculations made by Order of the Board of Longitude, upon the Series of lunar Observations made by the late *Dr. BRADLEY*, and published in the *Nautical Almanac* of 1774. In these new Tables, the Epoch of the Moon's mean Longitude is 1" less, that of the Apogee is 56" less, and that of the Ascending Node 45" more, than in *MAYER's* printed Tables, and the Equations are calculated to Tenths of a Second. Moreover, One new Equation is introduced, whose Argument is the mean Distance of the Moon from the Sun's Apogee, and Maximum 16",4. These new Tables, when compared with the above-mentioned Series of Observations, a proper Allowance being made for the unavoidable Error of Observation, seem to give always the Moon's Longitude in the Heavens correctly within 45 Seconds of a Degree; which greatest Error, added to a possible Error of One Minute in taking the Moon's Distance from the Sun or a Star at Sea, will at a Medium only produce an Error of 50 Minutes of Longitude.

The Calculations of the Planets were made from *Dr. HALLEY's* Tables; and the Eclipses of Jupiter's First and Second Satellites from the Tables of *Mr. WARGENTIN*, published by *M. DE LA LANDE* in 1759; and those of the Third and Fourth Satellites from Tables of the same farther improved by *Mr. WARGENTIN*, and annexed, the first to the *NAUTICAL ALMANAC* of 1771, and the other to the *CONNOISSANCE DES MOUVEMENTS CELESTES* of 1766.

All the Articles of the *EPHEMERIS* were computed by Two separate Persons, and examined by  
a Third.

## P R E F A C E.

a Third, except the Moon's Longitude, Latitude, Right Ascension, Declination, Semidiameter, and Parallax, which, for Noon, were computed by One Person, and for Midnight by another, and the Truth of these Calculations ascertained by means of Differences, which, for the Moon's Longitude, were carried as far as the Fourth Order.

To this EPHEMERIS are annexed, New Tables of the Second Satellite of JUPITER, transmitted to me from their learned Author Mr. WARGENTIN, Secretary to the Royal Academy of Sciences at *Stockholm*, being corrected and improved from the like Tables of the same Author annexed to M. DE LA LANDE's *Astronomy*; to which is added a Comparison of the same, with Observations made by different Astronomers during the last Thirteen Years. The Calculations of the Eclipses of the Second Satellite will be made from these Tables in the NAUTICAL ALMANAC of 1781.

NEVIL MASKELYNE,  
ASTRONOMER ROYAL.

GREENWICH,  
Nov. 13th,  
1776.

EXPLA-



# EXPLANATION of the Characters used in the EPHEMERIS.

## The PLANETS, &c.

- |   |           |
|---|-----------|
| ☉ The Sun.  | ♂ Mars.   |
| ☾ The Moon.   | ♃ Jupiter |
| ☿ Mercury.  | ♄ Saturn. |
| ♀ Venus.  |           |
| ♊ The Moon's, or any other Planet's Ascending Node.   |           |
| ♋ The Descending Node.  |           |
| ♌ Conjunction, or Planets situated in the same Longitude.                                       |           |
| ♍ Opposition, or Planets situated in opposite Longitudes, or differing 6 Signs from each other. |           |

## Signs of the Zodiac.

- |           |                |
|-----------|----------------|
| S.        | S.             |
| ♈ Aries.  | ♎ Libra.       |
| ♉ Taurus. | ♏ Scorpio.     |
| ♊ Gemini. | ♐ Sagittarius. |
| ♋ Cancer. | ♑ Capricornus. |
| ♌ Leo.    | ♒ Aquarius.    |
| ♍ Virgo.  | ♓ Pisces.      |

## ECLIPSES for the YEAR 1779.

May 15. ☉ eclipsed, invisible: ♂ at 13<sup>h</sup>. 6'. in 1°. 24'. 56<sup>1</sup>/<sub>2</sub>.  
♂'s Lat. 1°. 29<sup>1</sup>/<sub>2</sub> S.

May 29. ☾ eclipsed, partly visible: H. M.

Beginning of the Eclipse — — 15. 2

Beginning of total Darkneps — — 16. 13

Middle — — — — 16. 55

End of total Darkneps — — — 17. 37

End of the Eclipse — — — 18. 48

Digits eclipsed 15°. 47'.

June 13. ☉ eclipsed, visible:

Beginning of the Eclipse — — 19. 18

Middle — — — — 19. 59

End — — — — 20. 43

Digits eclipsed 3°<sup>1</sup>/<sub>4</sub> on the North Limb. The 1st Impression  
will be 16° from the Sun's Vertex to the West.

Nov. 23. ☾ eclipsed, visible:

Beginning of Eclipse — — 6. 7<sup>1</sup>/<sub>2</sub>

Beginning of total Darkneps — — 7. 7

Middle — — — — 7. 57<sup>1</sup>/<sub>2</sub>

End of total Darkneps — — 8. 48

End of Eclipse — — — 9. 47<sup>1</sup>/<sub>2</sub>

Digits eclipsed 20°. 42'.

Dec. 7. ☉ eclipsed, invisible: ♂ at 10<sup>h</sup>. 31'. in 3°. 15'. 46'.  
Lat. 1°. 14' S.

1779. Obliquity of the Ecliptic. Equat. of Equin. Points.

	D.	M.	S.	S.
Jan. 1. ———	23.	28.	6,5	17,7
Apr. 1. ———	23.	28.	7,2	17,3
July 1. ———	23.	28.	7,8	16,8
Oct. 1. ———	23.	28.	8,4	16,3
Dec. 31. ———	23.	28.	9,0	15,6

Errata in the EPHemeris for 1778.

In the Eclipse, June 24th, for  $\mathcal{D}$ 's Nadir, read  $\odot$ 's Nadir.

$\mathcal{D}$ 's Eclipse, Dec. 3, for invisible, read visible.

Before Obliquity of the Ecliptic, for 1777, read 1778.

Page 17, Feb. 23, col. 2,  $\mathcal{D}$ 's Long. at Noon, for  $9^{\circ}.11^{\circ}.53'.25''$ , read  $9^{\circ}.19^{\circ}.53'.25''$ .

—27, Mar. 27, col. 2, put an Asterisc to Eclipse of 1st Sat.

—37, Insert  $\mathcal{V}$  Stationary 14 D.

—41, Apr. 19, col. 4, for  $0^{\circ}.29^{\circ}.31'.55''$ , read  $9^{\circ}.29^{\circ}.31'.55''$ .

—44, Apr. 19, col. 6, for  $61^{\circ}.50'.41''$ , read  $91^{\circ}.50'.41''$ .

—45, Apr. 5, 6, 7, 8, col. 2, for The Sun, read Spica  $\mathcal{W}$ .

—45, Apr. 17, col. 5, for  $119^{\circ}.56'.14''$ , read  $109^{\circ}.56'.14''$ .

—61, June 1, read Easter Term ends.

—61, June 3, col. 3, read Camb. Term divides n.

—61, June 5, col. 3, read *Pr. Ern. Aug. born.*

—61, Insert  $\mathcal{V}$  Stationary 14 D.

—63, June 25, col. 3, in Eclipse of 2d Sat. for 23 read 25 D.

—64, Insert  $\mathcal{V}$ 's greatest Elongation 26 D.

—71, June 2, col. 3, for  $110^{\circ}.33'.37''$ , read  $100^{\circ}.33'.37''$ .

—71, June 20, col. 5, for  $51^{\circ}.14'.2''$ , read  $71^{\circ}.14'.2''$ .

—73, July 8, read Trinity Term ends.

—76, Insert  $\mathcal{H}$   $\square$  31 D.

—77, July 13, col. 3, for  $10^{\circ}.3^{\circ}.44'.41''$ , read  $11^{\circ}.3^{\circ}.44'.41''$ .

—98, Sept. 3, col. 1, for 2 read 3.

—104, Sept. 3, col. 3, for  $52^{\circ}.30'.7''$ , read  $53^{\circ}.30'.7''$ .

—105, Sept. 1, col. 5, for  $65^{\circ}.57'.0''$ , read  $66^{\circ}.57'.0''$ .

—105, Sept. 12, col. 3, for  $45^{\circ}.7'.35''$ , read  $41^{\circ}.7'.35''$ .

—109, Oct. 12, col. 3, dele Oxf. and Camb. Ter. begin, and insert it the 10th day.

Infert  $\left\{ \begin{array}{l} \text{Oct. 1. infer. } \mathcal{G} \text{ of } \mathcal{V} \\ \mathcal{V}'\text{'s Greatest Elong. } 17^d. \\ \mathcal{Q}'\text{'s Greatest Elong. } 26^d. \end{array} \right.$

—121, Mich. Term ends the 28th instead of 29th.

—121, Nov. 12, col. 3, read Camb. Term divides m.

—121, Nov. 1, col. 4, read  $\mathcal{V}$   $\mathcal{G}$  diff. Lat.  $22'$ .

—124, Nov. 19, for  $\mathcal{Q}'\text{'s } \mathcal{G}$  read  $\mathcal{V}'\text{'s Sup. } \mathcal{G}$ .

In the last Page of Advertisements, l. 19, annexed to the Nautical Almanacs from 1773 to 1778, for 1770 read 1760.

Omitted in the Nautical Almanac for 1779.

Mars  $\square$  Sept. 1, at 1 p. m.

I. J A N U A R Y 1779. [1]		
Days of the Month.	Days of the Week.	Sundays, Holidays, &c.
1	F.	<i>Circumcision.</i>
2	Sa.	
3	Su.	<i>2d Sunday after Christmas.</i>
4	M.	
5	Tu.	
6	W.	<i>Epiphany.</i>
7	Th.	
8	F.	<i>Lucian.</i>
9	Sa.	
10	Su.	<i>1st Sunday after Epiphany.</i>
11	M.	
12	Tu.	
13	W.	<i>Hil. Camb. Ter. begins.</i>
14	Th.	<i>Oxford Term begins.</i>
15	F.	
16	Sa.	
17	Su.	<i>2d Sunday after Epiphany.</i>
18	M.	<i>2. Charlotte's Birth-day</i>
19	Tu.	<i>[kept. Prisca.]</i>
20	W.	<i>Fabian. In 8 days of St.</i>
21	Th.	<i>Agnes. [Hil. 1 ret.]</i>
22	F.	<i>Vincent.</i>
23	Sa.	<i>Hilary Term begins.</i>
24	Su.	<i>3d Sunday after Epiphany.</i>
25	M.	<i>Conversion of St. Paul.</i>
26	Tu.	
27	W.	<i>Pr. Aug. Fred. born. In</i>
28	Th.	<i>[15 days of St. Hil. 2 ret.]</i>
29	F.	
30	Sa.	<i>King Charles I. martyr.</i>
31	Su.	<i>Septuagesima-Sunday.</i>

[2] J A N U A R Y 1779. II.

Days of the Month.	Days of the Week.	Sun's Longitude.	Sun's Right Asc. in Time.	Sun's Declin. South.	Equat. of Time. Add.	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
1	F.	9. 11. 2. 31	18. 48. 2. 3	23. 0. 32	4. 7. 7	28, 1
2	Sa.	9. 12. 3. 40	18. 52. 27, 0	22. 55. 14	4. 35, 8	27, 6
3	Su.	9. 13. 4. 49	18. 56. 51, 3	22. 49. 29	5. 3. 4	27, 3
4	M.	9. 14. 5. 58	19. 1. 15, 3	22. 43. 16	5. 30, 7	26, 8
5	Tu.	9. 15. 7. 7	19. 5. 38, 7	22. 36. 37	5. 57, 5	26, 4
6	W.	9. 16. 8. 16	19. 10. 1. 8	22. 29. 31	6. 23, 9	26, 0
7	Th.	9. 17. 9. 25	19. 14. 24, 4	22. 21. 58	6. 49, 9	25, 5
8	F.	9. 18. 10. 34	19. 18. 46, 5	22. 13. 58	7. 15, 4	25, 0
9	Sa.	9. 19. 11. 43	19. 23. 8, 1	22. 5. 33	7. 40, 6	24, 4
10	Su.	9. 20. 12. 52	19. 27. 29, 1	21. 56. 41	8. 4. 8	23, 9
11	M.	9. 21. 14. 1	19. 31. 49, 6	21. 47. 24	8. 28, 7	23, 3
12	Tu.	9. 22. 15. 9	19. 36. 9, 6	21. 37. 42	8. 52, 0	22, 7
13	W.	9. 23. 16. 18	19. 40. 28, 9	21. 27. 34	9. 14, 7	22, 0
14	Th.	9. 24. 17. 27	19. 44. 47, 5	21. 17. 2	9. 36, 7	21, 4
15	F.	9. 25. 18. 35	19. 49. 55, 5	21. 6. 5	9. 58, 1	20, 8
16	Sa.	9. 26. 19. 42	19. 53. 22, 9	20. 54. 43	10. 18, 9	20, 0
17	Su.	9. 27. 20. 49	19. 57. 39, 5	20. 42. 58	10. 38, 9	19, 3
18	M.	9. 28. 21. 55	20. 1. 55, 5	20. 30. 49	10. 58, 2	18, 6
19	Tu.	9. 29. 23. 0	20. 6. 10, 6	20. 18. 17	11. 16, 8	17, 8
20	W.	10. 0. 24. 4	20. 10. 25, 0	20. 5. 22	11. 34, 6	17, 0
21	Th.	10. 1. 25. 7	20. 14. 38, 7	19. 52. 5	11. 51, 6	16, 3
22	F.	10. 2. 26. 10	20. 18. 51, 6	19. 38. 25	12. 7, 9	15, 4
23	Sa.	10. 3. 27. 11	20. 23. 3, 5	19. 24. 24	12. 23, 3	14, 6
24	Su.	10. 4. 28. 11	20. 27. 14, 8	19. 10. 1	12. 37, 9	13, 8
25	M.	10. 5. 29. 9	20. 31. 25, 2	18. 55. 18	12. 51, 7	13, 0
26	Tu.	10. 6. 30. 6	20. 35. 34, 7	18. 40. 14	13. 4, 7	12, 1
27	W.	10. 7. 31. 2	20. 39. 43, 4	18. 24. 49	13. 16, 8	11, 3
28	Th.	10. 8. 31. 56	20. 43. 51, 3	18. 9. 6	13. 28, 1	10, 4
29	F.	10. 9. 32. 49	20. 47. 58, 3	17. 53. 2	13. 38, 5	9, 6
30	Sa.	10. 10. 33. 41	20. 52. 4, 4	17. 36. 39	13. 48, 1	8, 7
31	Su.	10. 11. 34. 31	20. 56. 9, 7	17. 19. 58	13. 56, 8	8, 0

# III. JANUARY 1779. [3]

Days.	Semidia- meter of the Sun.	Time of D <sup>o</sup> passing the Meridian.	Hourly Motion of the Sun.	Logarithm of the Sun's Distance.	Place of the Moon's Node.
	M. S.	M. S.	M. S.		S. D. M.
1	16. 19, 2	1. 10, 9	2. 32, 9	9. 992631	2. 19. 23
7	16. 19, 1	1. 10, 6	2. 32, 8	9. 992704	2. 19. 4
13	16. 18, 8	1. 10, 1	2. 32, 8	9. 992869	2. 18. 44
19	16. 18, 2	1. 9, 5	2. 32, 6	9. 993096	2. 18. 25
25	16. 17, 6	1. 8, 9	2. 32, 4	9. 993382	2. 18. 6

## Eclipses of the SATELLITES of JUPITER.

I. Satellite. Immersions.		II. Satellite. Immersions.		III. Satellite.	
Days	H. M. S.	Days	H. M. S.	Days	H. M. S.
1	1. 6. 51	3	18* 7. 42	7	11. 6. 43 I.
2	19. 34. 24	7	7. 22. 34	7	14* 11. 58 E.
4	14* 2. 2	10	20. 37. 35	14	15* 1. 57 I.
6	8. 29. 35	14	9. 52. 42	14	18* 6. 17 E.
8	2. 57. 15	17	23. 7. 58	21	18. 57. 40 I.
9	21. 24. 56	21	12* 23. 27	21	22. 1. 7 E.
11	15* 52. 34	25	1. 39. 10	28	22. 54. 8 I.
13	10. 20. 22	28	14* 55. 0	29	1. 56. 42 E.
15	4. 48. 4			IV. Satellite.	
16	23. 15. 52			15	3. 18. 25 I.
18	17* 43. 42			15	6. 59. 47 E.
20	12* 11. 35			31	21. 11. 18 I.
22	6. 39. 30				
24	1. 7. 29				
25	19. 35. 30				
27	14* 3. 33				
29	8. 31. 39				
31	2. 59. 47				



[4] J A N U A R Y 1779. IV.

Days.	Heliocen- tric Lon- gitude.	Heliocen- tric Lati- tude.	Geocen- tric Lon- gitude.	Geocen- tric Lati- tude.	Declina- tion.	Passage over Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.

Gr. El. 1. M E R C U R Y. Inf.  $\delta$  15<sup>d</sup>. 3<sup>n</sup>.

1	0. 28. 49	2. 4 S	10. 0. 14	0. 43 S	20. 49 S	1. 22
4	1. 16. 29	0. 4 N	10. 2. 5	0. 4 N	19. 39	1. 15
7	2. 5. 4	2. 18	10. 2. 27	0. 55	18. 45	1. 3
10	2. 24. 1	4. 20	10. 1. 4	1. 54	18. 8	0. 43
13	3. 12. 40	5. 51	9. 28. 8	2. 42	17. 54	0. 18
16	4. 0. 27	6. 44	9. 24. 20	3. 16	18. 3	23. 40
19	4. 16. 56	6. 59	9. 20. 41	3. 31	18. 24	23. 13
22	5. 2. 0	6. 43	9. 18. 1	3. 23	18. 54	22. 52
25	5. 15. 39	6. 4	9. 16. 39	3. 3	19. 24	22. 35
28	5. 28. 4	5. 11	9. 16. 35	2. 33	19. 54	22. 23
31	6. 9. 24	4. 10	9. 17. 32	2. 0	20. 19	22. 19

V E N U S. Inf.  $\delta$  6<sup>d</sup>. 14<sup>h</sup>  $\frac{1}{2}$ .

1	3. 7. 40	1. 20 N	9. 20. 4	3. 33 N	18. 27 S	0. 36
7	3. 17. 24	1. 50	9. 16. 30	4. 57	17. 33	23. 48
13	3. 27. 9	2. 17	9. 13. 0	6. 2	16. 50	23. 6
19	4. 6. 54	2. 41	9. 10. 25	6. 37	16. 27	22. 32
25	4. 16. 39	3. 0	9. 9. 11	6. 49	16. 21	22. 2

M A R S.  $\square$  28<sup>d</sup>. 13<sup>h</sup>.

1	5. 19. 59	1. 34 N	6. 25. 8	1. 38 N	8. 13 S	18. 45
7	5. 22. 38	1. 32	6. 28. 19	1. 39	9. 21	18. 31
13	5. 25. 18	1. 28	7. 1. 26	1. 39	10. 26	18. 17
19	5. 27. 58	1. 26	7. 4. 29	1. 40	11. 28	18. 3
25	6. 0. 39	1. 22	7. 7. 25	1. 40	12. 25	17. 49

J U P I T E R.

1	5. 17. 3	1. 14 N	5. 27. 11	1. 18 N	2. 19 N	17. 1
7	5. 17. 31	1. 14	5. 27. 18	1. 20	2. 18	16. 35
13	5. 17. 58	1. 14	5. 27. 21	1. 22	2. 18	16. 9
19	5. 18. 26	1. 14	5. 27. 16	1. 23	2. 25	15. 43
25	5. 18. 53	1. 15	5. 27. 2	1. 25	2. 29	15. 17

S A T U R N.

1	7. 19. 35	2. 12 N	7. 23. 45	2. 5 N	16. 44 S	20. 36
7	7. 19. 47	2. 12	7. 24. 19	2. 5	16. 51	20. 12
13	7. 19. 58	2. 12	7. 24. 48	2. 7	16. 57	19. 47
19	7. 20. 9	2. 12	7. 25. 16	2. 7	17. 3	19. 24
25	7. 20. 19	2. 12	7. 25. 40	2. 8	17. 8	19. 0

V. J A N U A R Y 1779. [5]

Days of the Month.	Days of the Week.	Moon's Lon- gitude at Noon.	Moon's Lon- gitude at Midnight.	Moon's Latitude at Noon.	Moon's La- titude at Midn.
		S. D. M. S.	S. D. M. S.	D.M.S.	D. M. S.
1	F.	2. 24. 19. 50	3. 1. 56. 14	0.21.15 N	1. 2. 58 N
2	Sa.	3. 9. 33. 49	3. 17. 11. 13	1.43.34	2. 22. 17
3	Su.	3. 24. 47. 12	4. 2. 20. 29	2.58.18	3. 30. 53
4	M.	4. 9. 49. 53	4. 17. 14. 21	3.59.39	4. 24. 0
5	Tu.	4. 24. 33. 5	5. 1. 45. 21	4.43.37	4. 58. 28
6	W.	5. 8. 50. 46	5. 15. 48. 58	5. 8.29	5. 13. 41
7	Th.	5. 22. 39. 56	5. 29. 23. 46	5.14.22	5. 10. 40
8	F.	6. 6. 0. 36	6. 12. 30. 52	5. 2.50	4. 51. 12
9	Sa.	6. 18. 54. 54	6. 25. 13. 18	4.36. 6	4. 17. 53
10	Su.	7. 1. 26. 33	7. 7. 35. 17	3.56.50	3. 33. 16
11	M.	7. 13. 40. 4	7. 19. 41. 31	3. 7.35	2. 40. 1
12	Tu.	7. 25. 40. 13	8. 1. 36. 44	2.10.55	1. 40. 35
13	W.	8. 7. 31. 40	8. 13. 25. 30	1. 9.19	0. 37. 26 N
14	Th.	8. 19. 18. 42	8. 25. 11. 47	0. 5.14 N	0. 26. 57 S
15	F.	9. 1. 5. 0	9. 6. 58. 50	0.58.51 S	1. 30. 9
16	Sa.	9. 12. 53. 36	9. 18. 49. 30	2. 0.29	2. 29. 33
17	Su.	9. 24. 46. 49	10. 0. 45. 47	2.57. 6	3. 22. 46
18	M.	10. 6. 46. 33	10. 12. 49. 14	3.46.18	4. 7. 22
19	Tu.	10. 18. 54. 7	10. 25. 1. 18	4.25.46	4. 41. 13
20	W.	11. 1. 10. 52	11. 7. 23. 8	4.53.29	5. 2. 21
21	Th.	11. 13. 38. 9	11. 19. 56. 12	5. 7.45	5. 9. 26
22	F.	11. 26. 17. 26	0. 2. 42. 11	5. 7.22	5. 1. 24
23	Sa.	0. 9. 10. 35	0. 15. 43. 0	4.51.34	4. 37. 51
24	Su.	0. 22. 19. 34	0. 29. 0. 40	4.20.19	3. 58. 59
25	M.	1. 5. 46. 24	1. 12. 37. 3	3.34.10	3. 5. 58
26	Tu.	1. 19. 32. 43	1. 26. 33. 33	2.34.40	2. 0. 42
27	W.	2. 3. 39. 26	2. 10. 50. 22	1.24.28	0. 46. 29 S
28	Th.	2. 18. 6. 6	2. 25. 26. 13	0. 7.22 S	0. 32. 15 N
29	F.	3. 2. 50. 13	3. 10. 17. 21	1.11.37 N	1. 49. 58
30	Sa.	3. 17. 46. 51	3. 25. 17. 35	2.26.35	3. 0. 42
31	Su.	4. 2. 48. 31	4. 10. 18. 28	3.31.40	3. 58. 49

[6] JANUARY 1779. VI.							
Days of the Month.	Days of the Week.	D's Age.	D's Pass- age over Merid.	D's Right Ascen. at Noon.	D's Right Asc. at Midn.	D's De- clinat. at Noon.	D's De- clin. at Midn.
			H. M.	D. M.	D. M.	D. M.	D. M.
1	F.	15	11. 17	83. 48	92. 8	23. 42 N	24. 30 N
2	Sa.	16	12. 22	100. 33	108. 57	24. 51	24. 43
3	Su.	17	13. 25	117. 18	125. 29	24. 7	23. 5
4	M.	18	14. 26	133. 26	141. 7	21. 39	19. 53
5	Tu.	19	15. 21	148. 30	155. 37	17. 48	15. 30
6	W.	20	16. 11	162. 26	169. 0	13. 1	10. 25
7	Th.	21	16. 58	175. 21	181. 31	7. 43	4. 59 N
8	F.	22	17. 43	187. 31	193. 24	2. 15 N	0. 29 S
9	Sa.	23	18. 26	199. 12	204. 57	3. 10 S	5. 46
10	Su.	24	19. 8	210. 40	216. 24	8. 17	10. 42
11	M.	25	19. 52	222. 10	227. 59	12. 59	15. 7
12	Tu.	26	20. 36	233. 52	239. 51	17. 5	18. 52
13	W.	27	21. 24	245. 56	252. 6	20. 27	21. 49
14	Th.	28	22. 12	258. 23	264. 44	22. 57	23. 50
15	F.	29	23. 1	271. 11	277. 41	24. 26	24. 47
16	Sa.	30	23. 51	284. 14	290. 47	24. 51	24. 37
17	Su.	1	♂	297. 18	303. 47	24. 6	23. 18
18	M.	2	0. 40	310. 12	316. 33	22. 15	20. 57
19	Tu.	3	1. 27	322. 48	328. 57	19. 23	17. 37
20	W.	4	2. 13	335. 1	341. 1	15. 38	13. 29
21	Th.	5	2. 58	346. 56	352. 48	11. 10	8. 43
22	F.	6	3. 42	358. 38	4. 29	6. 11	3. 32 S
23	Sa.	7	4. 26	10. 21	16. 16	0. 49 S	1. 55 N
24	Su.	8	5. 12	22. 16	28. 23	4. 40 N	7. 25
25	M.	9	5. 59	34. 40	41. 8	10. 6	12. 42
26	Tu.	10	6. 51	47. 49	54. 44	15. 10	17. 27
27	W.	11	7. 46	61. 55	69. 23	19. 32	21. 20
28	Th.	12	8. 46	77. 5	85. 1	22. 49	23. 56
29	F.	13	9. 49	93. 7	101. 20	24. 38	24. 54
30	Sa.	14	10. 54	109. 37	117. 51	24. 42	24. 4
31	Su.	15	11. 57	125. 59	133. 55	22. 59	21. 30

VII. JANUARY 1779. [7]

Days of the Month.	Days of the Week.	Semidr. $\gamma$ at Noon.	Semidr. $\gamma$ at Mid-night.	Hor. Par. $\gamma$ at Noon.	Hor. Par. $\gamma$ at Midnight.	Propor. Lo- gar. at Noon.	Propor. Lo- gar. at Midn.
1	F.	16. 45	16. 46	61. 28	61. 33	4666	4660
2	Sa.	16. 47	16. 46	61. 35	61. 39	4658	4664
3	Su.	16. 43	16. 39	61. 21	61. 7	4675	4691
4	M.	16. 34	16. 28	60. 49	60. 27	4712	4739
5	Tu.	16. 21	16. 14	60. 1	59. 35	4770	4801
6	W.	16. 6	15. 58	59. 6	58. 37	4837	4872
7	Th.	15. 50	15. 43	58. 7	57. 39	4910	4945
8	F.	15. 35	15. 28	57. 10	56. 44	4981	5014
9	Sa.	15. 21	15. 15	56. 18	55. 56	5048	5076
10	Su.	15. 9	15. 4	55. 34	55. 16	5104	5128
11	M.	14. 59	14. 55	54. 59	54. 46	5150	5167
12	Tu.	14. 52	14. 49	54. 34	54. 24	5183	5197
13	W.	14. 47	14. 46	54. 17	54. 11	5206	5214
14	Th.	14. 45	14. 45	54. 8	54. 6	5218	5221
15	F.	14. 45	14. 45	54. 6	54. 8	5221	5218
16	Sa.	14. 46	14. 47	54. 11	54. 15	5214	5209
17	Su.	14. 48	14. 50	54. 20	54. 27	5202	5193
18	M.	14. 52	14. 55	54. 34	54. 43	5183	5171
19	Tu.	14. 57	15. 0	54. 52	55. 4	5159	5144
20	W.	15. 3	15. 7	55. 15	55. 29	5129	5111
21	Th.	15. 11	15. 15	55. 42	55. 59	5094	5072
22	F.	15. 20	15. 25	56. 15	56. 34	5051	5027
23	Sa.	15. 30	15. 35	56. 52	57. 13	5004	4977
24	Su.	15. 41	15. 47	57. 33	57. 56	4952	4923
25	M.	15. 53	15. 59	58. 18	58. 42	4896	4866
26	Tu.	16. 6	16. 12	59. 4	59. 26	4839	4812
27	W.	16. 17	16. 23	59. 46	60. 6	4788	4764
28	Th.	16. 27	16. 31	60. 23	60. 38	4743	4725
29	F.	16. 35	16. 37	60. 51	60. 59	4710	4700
30	Sa.	16. 38	16. 38	61. 4	61. 4	4694	4694
31	Su.	16. 37	16. 35	61. 0	60. 52	4699	4709



[8] J A N U A R Y 1779. VIII.

Diftances of  $\gamma$ 's Center from  $\odot$ , and from Stars east of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Regulus.	62. 25. 35	60. 31. 36	58. 37. 32	56. 43. 23
2		47. 12. 6	45. 17. 56	43. 23. 54	41. 29. 59
3		32. 3. 12	30. 10. 35	28. 18. 25	26. 26. 42
4		17. 16. 39			
4	Spica $\mu$	71. 8. 1	69. 17. 19	67. 27. 0	65. 37. 4
5		56. 33. 31	54. 46. 10	52. 59. 17	51. 12. 54
6		42. 28. 31	40. 45. 13	39. 2. 33	37. 20. 26
7		28. 59. 13			
7	Antares.	74. 33. 16	72. 52. 34	71. 12. 20	69. 32. 34
8		61. 20. 27	59. 43. 16	58. 6. 30	56. 30. 8
9		48. 34. 17			
7	The Sun.	114. 22. 57	112. 49. 28	111. 16. 25	109. 43. 47
8		102. 7. 5	100. 36. 58	99. 7. 14	97. 37. 53
9		90. 16. 46	88. 49. 34	87. 22. 41	85. 56. 8
10		78. 47. 57	77. 23. 8	75. 58. 33	74. 34. 14
11		67. 36. 4	66. 13. 3	64. 50. 12	63. 27. 32
12		56. 36. 35	55. 14. 49	53. 53. 9	52. 31. 36
13		45. 45. 19	44. 24. 18	43. 3. 20	41. 42. 26
19	$\alpha$ Arietis.	76. 43. 6	75. 14. 26	73. 45. 41	72. 16. 51
20		64. 51. 34	63. 22. 15	61. 52. 54	60. 23. 29
21		52. 55. 53			
21	Aldeba- ran.	82. 37. 56	81. 4. 19	79. 30. 32	77. 56. 35
22		70. 3. 56	68. 28. 46	66. 53. 22	65. 17. 45
23		57. 16. 18	55. 39. 16	54. 2. 0	52. 24. 28
24		44. 13. 2	42. 33. 57	40. 54. 35	39. 14. 59
25		30. 53. 11	29. 12. 4	27. 30. 48	25. 49. 24
26		17. 21. 21			
26	Pollux.	61. 13. 14	59. 28. 37	57. 43. 40	55. 58. 24
27		47. 7. 20	45. 20. 12	43. 32. 48	41. 45. 5
28		32. 42. 43			
28	Regulus.	68. 39. 38	66. 49. 58	65. 0. 1	63. 9. 48
29		53. 55. 19	52. 3. 59	50. 12. 29	48. 20. 47
30		39. 0. 58	37. 8. 56	35. 16. 58	33. 25. 5
31		24. 7. 52			
31 F. 1	Spica $\mu$	78. 6. 29	76. 14. 35	74. 22. 49	72. 31. 11

## IX. JANUARY 1779. [9]

Distances of  $\gamma$ 's Center from  $\odot$ , and from Stars east of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Regulus.	54. 49. 8	52. 54. 51	51. 0. 35	49. 6. 20
2		39. 36. 12	37. 42. 34	35. 49. 11	33. 56. 4
3		24. 35. 25	22. 44. 42	20. 54. 40	19. 5. 19
4	Spica $\mu$	63. 47. 30	61. 58. 21	60. 9. 38	58. 21. 21
5		49. 27. 0	47. 41. 35	45. 56. 42	44. 12. 21
6		35. 38. 56	33. 58. 2	32. 17. 46	30. 38. 10
7	Antares.	67. 53. 18	66. 14. 27	64. 36. 2	62. 58. 2
8		54. 54. 10	53. 18. 36	51. 43. 26	50. 8. 40
6	The Sun.	120. 41. 20	119. 6. 4	117. 31. 15	115. 56. 53
7		108. 11. 36	106. 39. 51	105. 8. 31	103. 37. 36
8		96. 8. 56	94. 40. 21	93. 12. 8	91. 44. 16
9		84. 29. 55	83. 4. 0	81. 38. 22	80. 13. 1
10		73. 10. 9	71. 46. 19	70. 22. 41	68. 59. 46
11		62. 5. 2	60. 42. 42	59. 20. 31	57. 58. 29
12		51. 10. 10	49. 48. 50	48. 27. 35	47. 6. 24
13		40. 21. 36			
19	$\alpha$ Arietis.	70. 47. 57	69. 18. 58	67. 49. 54	66. 20. 46
20		58. 54. 1	57. 24. 31	55. 54. 59	54. 25. 26
21	Aldebaran.	76. 22. 27	74. 48. 8	73. 13. 36	71. 38. 52
22		63. 41. 55	62. 5. 52	60. 29. 35	58. 53. 4
23		50. 46. 42	49. 8. 40	47. 30. 23	45. 51. 50
24		37. 35. 7	35. 54. 59	34. 14. 37	32. 34. 0
25		24. 7. 52	22. 26. 15	20. 44. 37	19. 2. 59
26	Pollux.	54. 12. 49	52. 26. 54	50. 40. 41	48. 54. 10
27		39. 57. 6	38. 8. 52	36. 20. 24	34. 31. 40
28	Regulus.	61. 19. 19	59. 28. 36	57. 37. 42	55. 46. 36
29		46. 28. 54	44. 36. 59	42. 45. 1	40. 53. 1
30		31. 33. 17	29. 41. 38	27. 50. 10	25. 58. 54
31	Spica $\mu$	70. 39. 42	68. 48. 24	66. 57. 19	65. 6. 28

10] J A N U A R Y 1779. X.

Distances of  $\gamma$ 's Center from  $\odot$ , and from Stars west of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Aldebaran.	18. 32. 47	20. 24. 31	22. 16. 39	24. 9. 12
2		33. 36. 18	35. 30. 7	37. 23. 57	39. 17. 48
3		48. 46. 3	50. 39. 18	52. 32. 21	54. 25. 11
4		63. 45. 32	65. 36. 42	67. 27. 31	69. 17. 58
5	Pollux.	34. 15. 24	36. 2. 58	37. 50. 11	39. 37. 2
6		48. 25. 15	50. 9. 38	51. 53. 34	53. 37. 4
7	Regulus.	26. 18. 15	27. 58. 1	29. 37. 29	31. 16. 41
8		39. 27. 38	41. 4. 47	42. 41. 34	44. 18. 2
9		52. 15. 13	53. 49. 41	55. 23. 51	56. 57. 44
10		64. 42. 48	66. 15. 1	67. 47. 0	69. 18. 45
11		76. 54. 9			
11	Spica $\alpha$	23. 28. 41	24. 55. 56	26. 23. 19	27. 50. 50
12		35. 9. 39	36. 37. 30	38. 5. 21	39. 33. 12
13		46. 52. 24	48. 20. 13	49. 48. 2	51. 15. 50
14		58. 34. 55	60. 2. 46	61. 30. 39	62. 58. 33
15		70. 18. 22	71. 46. 26	73. 14. 34	74. 42. 46
21	The Sun.	42. 28. 8	43. 54. 4	45. 20. 12	46. 46. 32
22		54. 1. 17	55. 28. 55	56. 56. 47	58. 24. 53
23		65. 48. 58	67. 18. 34	68. 48. 26	70. 18. 35
24		77. 53. 30	79. 25. 23	80. 57. 34	82. 30. 4
25		90. 17. 12	91. 51. 36	93. 26. 21	95. 1. 26
26		103. 1. 49	104. 38. 55	106. 16. 22	107. 54. 9
27		116. 7. 55	117. 47. 37	119. 27. 40	121. 8. 2
25	$\alpha$ Pegasi.	50. 9. 50	51. 36. 12	53. 3. 27	54. 31. 36
26		62. 4. 34	63. 37. 22	65. 10. 47	66. 44. 50
27		74. 43. 24			
27	$\alpha$ Arietis.	31. 6. 25	32. 43. 2	34. 20. 44	35. 59. 33
28		44. 27. 51	46. 11. 46	47. 56. 16	49. 41. 20
29		58. 33. 56			
29	Aldebaran.	26. 56. 36	28. 47. 4	30. 37. 49	32. 28. 52
30		41. 47. 27	43. 39. 36	45. 31. 48	47. 24. 4
31		56. 45. 37	58. 37. 49	60. 29. 53	62. 21. 51
F. 1		71. 39. 19			



# XI. JANUARY 1779. [11]

Distances of  $\gamma$ 's Center from  $\odot$ , and from Stars west of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Aldebaran.	26. 2. 10	27. 55. 25	29. 48. 52	31. 42. 29
2		41. 11. 39	43. 5. 25	44. 59. 4	46. 52. 37
3		56. 17. 49	58. 10. 11	60. 2. 15	61. 54. 2
4		71. 8. 3			
4	Pollux.	27. 1. 51	28. 50. 42	30. 39. 15	32. 27. 29
5		41. 23. 30	43. 9. 34	44. 55. 12	46. 40. 26
6		55. 20. 6			
6	Regulus.	19. 37. 0	21. 17. 37	22. 58. 2	24. 38. 15
7		32. 55. 35	34. 34. 6	36. 12. 17	37. 50. 8
8		45. 54. 9	47. 29. 54	49. 5. 20	50. 40. 26
9		58. 31. 18	60. 4. 35	61. 37. 35	63. 10. 20
10		70. 50. 15	72. 21. 33	73. 52. 38	75. 23. 30
11	Spica $\pi$ .	29. 18. 28	30. 46. 11	32. 13. 57	33. 41. 47
12		41. 1. 4	42. 28. 54	43. 56. 41	45. 24. 34
13		52. 43. 39	54. 11. 27	55. 39. 16	57. 7. 5
14		64. 26. 28	65. 54. 24	67. 22. 21	68. 50. 20
15		76. 11. 1			
20	The Sun.			39. 36. 53	41. 2. 24
21		48. 13. 4	49. 39. 48	51. 6. 45	52. 33. 54
22		59. 53. 13	61. 21. 47	62. 50. 35	64. 19. 40
23		71. 49. 1	73. 19. 42	74. 50. 40	76. 21. 56
24		84. 2. 52	85. 35. 58	87. 9. 23	88. 43. 8
25		96. 36. 51	98. 12. 35	99. 48. 39	101. 25. 4
26		109. 32. 16	111. 10. 41	112. 49. 26	114. 28. 31
25	$\alpha$ Pegasi.	56. 0. 33	57. 30. 29	59. 1. 5	60. 32. 27
26		68. 19. 31	69. 54. 45	71. 30. 28	73. 6. 41
27	$\alpha$ Arietis.	37. 39. 28	39. 20. 20	41. 2. 1	42. 44. 32
28		51. 27. 0	53. 13. 8	54. 59. 41	56. 45. 37
29	Aldebaran.	34. 20. 12	36. 11. 46	38. 3. 29	39. 55. 23
30		49. 16. 24	51. 8. 45	53. 1. 4	54. 53. 21
31		64. 13. 42	66. 5. 24	67. 56. 54	69. 48. 12



[12] JANUARY 1779. XII.

Configurations of the SATELLITES of JUPITER  
at 4 o'Clock in the Morning.

1		4.	2.	3.	○	1	
2		4.	3.	2.	1.	○	
3		4.	3.			○	1.
4		4.	3.	2.	1.	○	2.
5		4.	2.			○	3.
6	2.0	4.			○	1.	3.
7			4.	1.	○	2.	3.
8	3.			2.	○	4.	1.
9		3.	2.	1.	○		4.
10		3.			○	1.	2.
11			3.	2.	○	2.	4.
12	1.		2.		○	3.	4.
13	1.0			2.	○	3.	4.
14				1.	○	2.	3.
15				2.	○	3.	4.
16	4.		3.	2.	1.	○	
17		3.	4.			○	2.
18		4.	3.	2.	1.	○	
19		4.	2.			○	3.
20	4.			2.	○		3.
21	4.			1.	○	2.	3.
22		4.			○	3.	
23		4.	3.	2.	1.	○	
24		3.		4.		○	2.
25		3.	2.	1.		○	4.
26	3.0		2.			○	4.
27			2.	1.	○		4.
28	1.				○	2.	4.
29	2.				○	3.	4.
30		3.	2.	1.	○		4.
31		3.			○	2.	4.

# I. FEBRUARY 1779. [13]

Days of the Month.	Days of the Week.	Sundays, Holidays, &c.	Phases of the Moon.
			D. H. M.
			Last Quarter — 7. 18. 37
			New Moon — 15. 23. 36
			First Quarter — 23. 9. 3
1	M.		D. Other Phenomena.
2	Tu.	<i>Purif. of B.V. Mary.</i>	1. ☾ ♄ 11 <sup>h</sup> . 25'.
3	W.	Blas. On mor. of Purif.	2. ☾ ♄ 19 <sup>h</sup> . 55'.
4	Th.	[3 ret.]	3. ☾ ☿ 23 <sup>h</sup> . 2'.
5	F.	Agatha.	6. ☾ ♀ 7 <sup>h</sup> . 44'.
6	Sa.		7. ☾ ♂ 7 <sup>h</sup> . 3'.
7	Su.	<i>Sexagesima-Sunday.</i>	☾ 4 ad ☿ = 23 <sup>h</sup> . 33'.
8	M.		8. ☾ ♄ 8 <sup>h</sup> . 29'.
9	Tu.	In 8 days of Purif. 4 ret.	☾ β ♄ Im. 13 <sup>h</sup> . 57'.
10	W.		2' S. of ☽'s center.
11	Th.		Em. 15 <sup>h</sup> . 6'. * 4 <sup>1</sup> / <sub>2</sub> N.
12	F.	Hilary Term ends.	10. ☾ B Ophiuchi 6 <sup>h</sup> . 35'.
13	Sa.		11. ☾ λ ♄ 11 <sup>h</sup> . 6'.
14	Su.	<i>Quinquages. Su. Valen-</i>	18. ☾ 33 ♄ 4 <sup>h</sup> . 50'.
15	M.	[tine.]	☾ enters ♄ at 5 <sup>h</sup> . 25'.
16	Tu.		23. ☾ ♄ 23 <sup>h</sup> . 42'.
17	W.	<i>Ash Wed. Camb. Term</i>	25. ☾ ♄ 14 <sup>h</sup> . 45'.
18	Th.	[divides. n.]	26. ☾ ♄ 13 <sup>h</sup> . 31'.
19	F.		☾ 4 ad ☿ = diff. Lat. 41'.
20	Sa.		27. ☽ ♄ w diff. Lat. 43'.
			☾ ☽ Im. 12 <sup>h</sup> . 20 <sup>1</sup> / <sub>2</sub> '.
			* 4' N. of ☽'s cent.
21	Su.	<i>1st Sunday in Lent.</i>	Em. 13 <sup>h</sup> . 22'. *
22	M.		6 <sup>1</sup> / <sub>2</sub> N.
23	Tu.		28. ☾ ♄ 21 <sup>h</sup> . 49'.
24	W.	<i>St. Matthias. Pr. Adol.</i>	
25	Th.	[Fred. born.]	
26	F.		
27	Sa.		
28	Su.	<i>2d. Sunday in Lent.</i>	

[14] FEBRUARY 1779. II.

Days of the Month.	Days of the Week.	Sun's Longitude.	Sun's Right Asc. in Time.	Sun's Declin. South.	Equat. of Time. Add.	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
1	M.	10. 12. 35. 21	21. 0. 14, 3	17. 2. 58	14. 4, 8	7, 1
2	Tu.	10. 13. 36. 9	21. 4. 18, 1	16. 45. 41	14. 11, 9	6, 3
3	W.	10. 14. 36. 55	21. 8. 20, 9	16. 28. 6	14. 18, 2	5, 5
4	Th.	10. 15. 37. 41	21. 12. 23, 0	16. 10. 14	14. 23, 7	4, 7
5	F.	10. 16. 38. 26	21. 16. 24, 2	15. 52. 5	14. 28, 4	3, 9
6	Sa.	10. 17. 39. 9	21. 20. 24, 7	15. 33. 41	14. 32, 3	3, 1
7	Su.	10. 18. 39. 52	21. 24. 24, 3	15. 15. 0	14. 35, 4	2, 3
8	M.	10. 19. 40. 33	21. 28. 23, 2	14. 56. 3	14. 37, 7	1, 6
9	Tu.	10. 20. 41. 14	21. 32. 21, 3	14. 36. 51	14. 39, 3	0, 8
10	W.	10. 21. 41. 54	21. 36. 18, 7	14. 17. 25	14. 40, 1	0, 0
11	Th.	10. 22. 42. 32	21. 40. 15, 3	13. 57. 44	14. 40, 1	0, 8
12	F.	10. 23. 43. 9	21. 44. 11, 1	13. 37. 50	14. 39, 3	1, 4
13	Sa.	10. 24. 43. 45	21. 48. 6, 2	13. 17. 42	14. 37, 9	2, 2
14	Su.	10. 25. 44. 19	21. 52. 0, 5	12. 57. 21	14. 35, 7	3, 0
15	M.	10. 26. 44. 52	21. 55. 54, 1	12. 36. 46	14. 32, 7	3, 6
16	Tu.	10. 27. 45. 23	21. 59. 47, 0	12. 16. 2	14. 29, 1	4, 4
17	W.	10. 28. 45. 53	22. 3. 39, 1	11. 55. 5	14. 24, 7	5, 1
18	Th.	10. 29. 46. 21	22. 7. 30, 6	11. 33. 57	14. 19, 6	5, 8
19	F.	11. 0. 46. 47	22. 11. 21, 3	11. 12. 37	14. 13, 8	6, 5
20	Sa.	11. 1. 47. 12	22. 15. 11, 4	10. 51. 7	14. 7, 3	7, 2
21	Su.	11. 2. 47. 34	22. 19. 0, 8	10. 29. 28	14. 0, 1	7, 8
22	M.	11. 3. 47. 54	22. 22. 49, 5	10. 7. 39	13. 52, 3	8, 5
23	Tu.	11. 4. 48. 12	22. 26. 37, 5	9. 45. 41	13. 43, 8	9, 1
24	W.	11. 5. 48. 28	22. 30. 24, 9	9. 23. 34	13. 34, 7	9, 7
25	Th.	11. 6. 48. 42	22. 34. 11, 7	9. 1. 19	13. 25, 0	10, 3
26	F.	11. 7. 48. 54	22. 37. 57, 9	8. 38. 55	13. 14, 7	10, 9
27	Sa.	11. 8. 49. 3	22. 41. 43, 6	8. 16. 25	13. 3, 8	11, 5
28	Su.	11. 9. 49. 11	22. 45. 28, 6	7. 53. 48	12. 52, 3	12, 1



# III. FEBRUARY 1779. [15]

Days.	Semidia- meter of the Sun.	Time of D <sup>o</sup> passing the Meridian.	Hourly Motion of the Sun.	Logarithm of the Sun's Distance.	Place of the Moon's Node.
	M. S.	M. S.	M. S.		S. D. M.
1	16. 16, 5	1. 8, 1	2. 32, 2	9. 993809	2. 17. 44
7	16. 15, 6	1. 7, 4	2. 31, 8	9. 994277	2. 17. 25
13	16. 14, 4	1. 6, 7	2. 31, 5	9. 994808	2. 17. 6
19	16. 13, 1	1. 6, 1	2. 31, 0	9. 995376	2. 16. 47
25	16. 11, 7	1. 5, 6	2. 30, 5	9. 995976	2. 16. 28

## Eclipses of the SATELLITES of JUPITER.

I. Satellite. Immersion.		II. Satellite. Immersion.		III. Satellite.	
Days	H. M. S.	Days	H. M. S.	Days	H. M. S.
1	21. 27. 59	1	4. 10. 59	5	2. 51. 32 I.
3	15* 56. 15	4	17* 27. 16	5	5. 52. 54 E.
5	10* 24. 35	8	6. 43. 46	12	6. 49. 36 I.
7	4. 52. 54	11	20. 0. 30	12	9* 50. 1 E.
8	23. 21. 18	15	9* 17. 24	19	10* 48. 24 I.
10	17* 49. 43	18	22. 34. 32	19	13* 47. 52 E.
12	12* 18. 14	22	11* 51. 51	26	14* 47. 52 I.
14	6. 46. 44	26	1. 9. 25	26	17* 46. 24 E.
16	1. 15. 19			IV. Satellite.	
17	19. 43. 53			1	0. 46. 59 E.
19	14* 12. 36			17	15* 8. 29 I.
21	8* 41. 15			17	18. 38. 15 E.
23	3. 10. 1				
24	21. 38. 44				
26	16* 7. 35				
28	10* 36. 25				

[16] FEBRUARY 1779. IV.

Days.	Heliocen- tric Lon- gitude.	Heliocen- tric Lati- tude.	Geocen- tric Lon- gitude.	Geocen- tric Lati- tude.	Declina- tion.	Passage over Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.

MERCURY. Gr. Elong. 7<sup>d</sup>.

1	6. 12. 59	3. 49 N	9. 18. 4	1. 49 N	20. 27 S	22. 16
4	6. 23. 12	2. 42	9. 20. 6	1. 16	20. 43	22. 13
7	7. 2. 46	1. 36	9. 22. 43	0. 43	20. 50	22. 14
10	7. 11. 50	0. 30 N	9. 25. 47	0. 13 N	20. 48	22. 15
13	7. 20. 32	0. 34 S	9. 29. 12	0. 15 S	20. 35	22. 19
16	7. 28. 58	1. 35	10. 2. 54	0. 40	20. 11	22. 23
19	8. 7. 15	2. 33	10. 6. 50	1. 3	19. 36	22. 29
22	8. 15. 29	3. 28	10. 10. 59	1. 22	18. 49	22. 34
25	8. 23. 45	4. 18	10. 15. 19	1. 39	17. 51	22. 41
28	9. 2. 9	5. 4	10. 19. 49	1. 53	16. 40	22. 48

VENUS.

1	4. 28. 2	3. 15 N	9. 9. 35	6. 38 N	16. 30 S	21. 37
7	5. 7. 47	3. 22	9. 11. 24	6. 12	16. 48	21. 21
13	5. 17. 32	3. 23	9. 14. 16	5. 39	17. 5	21. 11
19	5. 27. 15	3. 18	9. 17. 59	5. 2	17. 16	21. 4
25	6. 6. 57	3. 8	9. 22. 22	4. 22	17. 18	20. 59

MARS.

1	6. 3. 47	1. 18 N	7. 10. 44	1. 40 N	13. 29 S	17. 33
7	6. 6. 30	1. 14	7. 13. 25	1. 39	14. 19	17. 20
13	6. 9. 13	1. 10	7. 16. 0	1. 39	15. 4	17. 6
19	6. 11. 58	1. 6	7. 18. 25	1. 37	15. 47	16. 53
25	6. 14. 43	1. 1	7. 20. 39	1. 36	16. 24	16. 39

JUPITER.

1	5. 19. 25	1. 15 N	5. 26. 40	1. 27 N	2. 39 N	14. 47
7	5. 19. 52	1. 15	5. 26. 14	1. 28	2. 51	14. 21
13	5. 20. 20	1. 15	5. 25. 42	1. 30	3. 5	13. 56
19	5. 20. 47	1. 15	5. 25. 5	1. 31	3. 21	13. 31
25	5. 21. 15	1. 16	5. 24. 24	1. 32	3. 38	13. 5

SATURN.  $\square$  14<sup>d</sup>. 22<sup>h</sup>  $\frac{1}{2}$ .

1	7. 20. 33	2. 11 N	7. 26. 5	2. 9 N	17. 13 S	18. 34
7	7. 20. 44	2. 11	7. 26. 22	2. 10	17. 15	18. 11
13	7. 20. 55	2. 11	7. 26. 37	2. 11	17. 18	17. 48
19	7. 21. 6	2. 11	7. 26. 48	2. 12	17. 19	17. 26
25	7. 21. 17	2. 10	7. 26. 55	2. 13	17. 20	17. 4



V. FEBRUARY 1779. [17]

Days of the Month.	Days of the Week.	Moon's Longitude at Noon.	Moon's Longitude at Midnight.	Moon's Latitude at Noon.	Moon's Latitude at Midn.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
1	M.	4. 17. 46. 14	4. 25. 10. 36	4. 21. 46. N	4. 40. 7. N
2	Tu.	5. 2. 30. 30	5. 9. 45. 15	4. 53. 34	5. 2. 7
3	W.	5. 16. 53. 47	5. 23. 55. 42	5. 5. 48	5. 4. 47
4	Th.	6. 0. 50. 33	6. 7. 38. 18	4. 59. 18	4. 49. 38
5	F.	6. 14. 18. 52	6. 20. 52. 29	4. 36. 9	4. 19. 13
6	Sa.	6. 27. 19. 25	7. 3. 40. 8	3. 59. 14	3. 36. 36
7	Su.	7. 9. 55. 10	7. 16. 5. 6	3. 11. 40	2. 44. 48
8	M.	7. 22. 10. 34	7. 28. 12. 14	2. 16. 23	1. 46. 43
9	Tu.	8. 4. 10. 49	8. 10. 6. 58	1. 16. 8	0. 44. 56 N
10	W.	8. 16. 1. 24	8. 21. 54. 45	0. 13. 25 N	0. 18. 6 S
11	Th.	8. 27. 47. 39	9. 3. 40. 43	0. 49. 23	1. 20. 5
12	F.	9. 9. 34. 29	9. 15. 29. 28	1. 49. 57	2. 18. 41
13	Sa.	9. 21. 26. 4	9. 27. 24. 41	2. 46. 0	3. 11. 36
14	Su.	10. 3. 25. 37	10. 9. 29. 8	3. 35. 11	3. 56. 28
15	M.	10. 15. 35. 24	10. 21. 44. 37	4. 15. 11	4. 31. 3
16	Tu.	10. 27. 56. 47	11. 4. 11. 58	4. 43. 49	4. 53. 16
17	W.	11. 10. 30. 11	11. 16. 51. 24	4. 59. 14	5. 1. 32
18	Th.	11. 23. 15. 37	11. 29. 42. 42	5. 0. 3	4. 54. 45
19	F.	0. 6. 12. 42	0. 12. 45. 31	4. 45. 37	4. 32. 36
20	Sa.	0. 19. 21. 14	0. 25. 59. 44	4. 15. 54	3. 55. 34
21	Su.	1. 2. 41. 8	1. 9. 25. 25	3. 31. 53	3. 5. 2
22	M.	1. 16. 12. 46	1. 23. 3. 9	2. 35. 21	2. 3. 12
23	Tu.	1. 29. 56. 41	2. 6. 53. 26	1. 29. 2	0. 53. 12 S
24	W.	2. 13. 53. 25	2. 20. 56. 42	0. 16. 19 S	0. 21. 6 N
25	Th.	2. 28. 3. 9	3. 5. 12. 39	0. 58. 26 N	1. 35. 6
26	F.	3. 12. 24. 57	3. 19. 39. 41	2. 10. 27	2. 43. 50
27	Sa.	3. 26. 56. 21	4. 4. 14. 21	3. 14. 40	3. 42. 24
28	Su.	4. 11. 32. 56	4. 18. 51. 17	4. 6. 27	4. 26. 25

[18] FEBRUARY 1779. VI.

Days of the Month.	Days of the Week.	D's Age.	D's Pass. age over Merid.	D's Right Ascen. at Noon.	D's Right Asc. at Midn.	D's Declination at Noon.	D's Declination at Midn.
			H. M.	D. M.	D. M.	D. M.	D. M.
1	M.	16	12. 56	141. 38	149. 7	19. 40 N	17. 32 N
2	Tu.	17	13. 50	156. 19	163. 15	15. 9	12. 35
3	W.	18	14. 41	169. 58	176. 27	9. 52	7. 5
4	Th.	19	15. 28	182. 45	188. 55	4. 14 N	1. 24 N
5	F.	20	16. 13	194. 58	200. 54	1. 24 S	4. 9 S
6	Sa.	21	16. 57	206. 48	212. 40	6. 49	9. 21
7	Su.	22	17. 42	218. 33	224. 26	11. 46	14. 2
8	M.	23	18. 27	230. 22	236. 22	16. 8	18. 3
9	Tu.	24	19. 14	242. 26	248. 36	19. 45	21. 15
10	W.	25	20. 2	254. 51	261. 10	22. 31	23. 31
11	Th.	26	20. 52	267. 34	274. 3	24. 16	24. 45
12	F.	27	21. 42	280. 34	287. 6	24. 57	24. 52
13	Sa.	28	22. 32	293. 39	300. 10	24. 29	23. 50
14	Su.	29	23. 20	306. 39	313. 4	22. 54	21. 42
15	M.	1	♂	319. 24	325. 40	20. 14	18. 33
16	Tu.	2	0. 8	331. 50	337. 55	16. 38	14. 32
17	W.	3	0. 54	343. 57	349. 54	12. 15	9. 49
18	Th.	4	1. 39	355. 48	1. 42	7. 16	4. 37 S
19	F.	5	2. 23	7. 35	13. 30	1. 54 S	0. 52 N
20	Sa.	6	3. 9	19. 28	25. 32	3. 38 N	6. 23
21	Su.	7	3. 56	31. 43	38. 1	9. 6	11. 43
22	M.	8	4. 45	44. 30	51. 11	14. 14	16. 34
23	Tu.	9	5. 38	58. 5	65. 13	18. 43	20. 37
24	W.	10	6. 35	72. 34	80. 7	22. 14	23. 31
25	Th.	11	7. 36	87. 52	95. 45	24. 26	24. 57
26	F.	12	8. 38	103. 43	111. 43	25. 3	24. 44
27	Sa.	13	9. 41	119. 41	127. 32	23. 59	22. 50
28	Su.	14	10. 41	135. 14	142. 45	21. 17	19. 24

VII. FEBRUARY 1779. [19]

Days of the Month.	Days of the Week.	Semidr. $\gamma$ at Noon.	Semidr. $\gamma$ at Mid-night.	Hor. Par. $\gamma$ at Noon.	Hor. Par. $\gamma$ at Midnight.	Proport. Lo- gar. at Noon.	Proport. Lo- gar. at Midn.
		M. S.	M. S.	M. S.	M. S.		
1	M.	16. 32	16. 27	60. 39	60. 22	4724	4745
2	Tu.	16. 21	16. 15	60. 2	59. 39	4769	4797
3	W.	16. 8	16. 1	59. 14	58. 47	4827	4860
4	Th.	15. 53	15. 46	58. 19	57. 51	4895	4930
5	F.	15. 38	15. 31	57. 23	56. 56	4965	4999
6	Sa.	15. 24	15. 17	56. 30	56. 6	5032	5063
7	Su.	15. 11	15. 6	55. 44	55. 24	5091	5118
8	M.	15. 1	14. 57	55. 6	54. 51	5141	5161
9	Tu.	14. 54	14. 51	54. 39	54. 29	5177	5190
10	W.	14. 49	14. 47	54. 22	54. 17	5199	5206
11	Th.	14. 47	14. 46	54. 14	54. 13	5210	5211
12	F.	14. 47	14. 48	54. 15	54. 19	5209	5203
13	Sa.	14. 49	14. 51	54. 24	54. 31	5197	5187
14	Su.	14. 53	14. 56	54. 39	54. 49	5177	5163
15	M.	14. 59	15. 2	55. 0	55. 12	5149	5133
16	Tu.	15. 6	15. 9	55. 24	55. 37	5118	5100
17	W.	15. 13	15. 17	55. 52	56. 5	5081	5064
18	Th.	15. 21	15. 25	56. 10	56. 33	5046	5028
19	F.	15. 29	15. 33	56. 48	57. 4	5009	4989
20	Sa.	15. 37	15. 41	57. 20	57. 34	4968	4951
21	Su.	15. 45	15. 49	57. 50	58. 4	4931	4913
22	M.	15. 54	15. 58	58. 20	58. 35	4893	4875
23	Tu.	16. 2	16. 6	58. 50	59. 5	4856	4838
24	W.	16. 10	16. 13	59. 19	59. 21	4821	4806
25	Th.	16. 16	16. 19	59. 43	59. 53	4792	4779
26	F.	16. 21	16. 23	60. 1	60. 8	4770	4761
27	Sa.	16. 24	16. 24	60. 11	60. 12	4758	4757
28	Su.	16. 24	16. 22	60. 10	60. 4	4759	4766



[18] FEBRUARY 1779. VI.						
Days of the Month.	Days of the Week.	D's Age.	D's Pass- age over Merid.	D's Right Ascen. at Noon.	D's Right Asc. at Midn.	D's De- clination at Noon.
			H. M.	D. M.	D. M.	D. M.
1	M.	16	12. 56	141. 38	149. 7	19. 40 N
2	Tu.	17	13. 50	156. 19	163. 15	15. 9
3	W.	18	14. 41	169. 58	176. 27	9. 52
4	Th.	19	15. 28	182. 45	188. 55	4. 14 N
5	F.	20	16. 13	194. 58	200. 54	1. 24 S
6	Sa.	21	16. 57	206. 48	212. 40	6. 49
7	Su.	22	17. 42	218. 33	224. 26	11. 46
8	M.	23	18. 27	230. 22	236. 22	16. 8
9	Tu.	24	19. 14	242. 26	248. 36	19. 45
10	W.	25	20. 2	254. 51	261. 10	22. 31
11	Th.	26	20. 52	267. 34	274. 3	24. 16
12	F.	27	21. 42	280. 34	287. 6	24. 57
13	Sa.	28	22. 32	293. 39	300. 10	24. 29
14	Su.	29	23. 20	306. 39	313. 4	22. 54
15	M.	1	♂	319. 24	325. 40	20. 14
16	Tu.	2	0. 8	331. 50	337. 55	16. 38
17	W.	3	0. 54	343. 57	349. 54	12. 15
18	Th.	4	1. 39	355. 48	1. 42	7. 16
19	F.	5	2. 23	7. 35	13. 30	1. 54 S
20	Sa.	6	3. 9	19. 28	25. 32	3. 38 N
21	Su.	7	3. 56	31. 43	38. 1	9. 6
22	M.	8	4. 45	44. 30	51. 11	14. 14
23	Tu.	9	5. 38	58. 5	65. 13	18. 43
24	W.	10	6. 35	72. 34	80. 7	22. 14
25	Th.	11	7. 36	87. 52	95. 45	24. 26
26	F.	12	8. 38	103. 43	111. 43	25. 3
27	Sa.	13	9. 41	119. 41	127. 32	23. 59
28	Su.	14	10. 41	135. 14	142. 45	21. 17

Distances of  $\gamma$ 's Center from  $\odot$ , and from Stars east of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Spica $\kappa$	63. 15. 52	61. 25. 31	59. 35. 26	57. 45. 39
2		48. 41. 55	46. 54. 18	45. 7. 8	43. 20. 25
3		34. 34. 17	32. 50. 44	31. 7. 48	29. 25. 31
4	Antares.	66. 26. 22	64. 44. 42	63. 3. 30	61. 22. 44
5		53. 5. 43	51. 27. 39	49. 50. 2	48. 12. 52
6		40. 13. 35	38. 39. 2	37. 4. 55	35. 31. 15
7		27. 49. 40	26. 18. 42	24. 48. 20	23. 18. 35
8		16. 0. 26			
5	The Sun.		120. 41. 41	119. 11. 13	117. 41. 9
6		110. 16. 39	108. 48. 52	107. 21. 26	105. 54. 21
7		98. 43. 53	97. 18. 44	95. 53. 51	94. 29. 15
8		87. 30. 6	86. 7. 0	84. 44. 5	83. 21. 24
9		76. 30. 37	75. 8. 57	73. 47. 24	72. 26. 0
10		65. 40. 30	64. 19. 40	62. 58. 53	61. 38. 10
11		54. 55. 8	53. 34. 35	52. 14. 2	50. 53. 29
12		44. 10. 29	42. 49. 48	41. 29. 4	40. 8. 18
18	Aldeba- ran.	73. 5. 0	71. 29. 11	69. 53. 12	68. 17. 2
19		60. 13. 30	58. 36. 16	56. 58. 52	55. 21. 17
20		47. 10. 44	45. 32. 7	43. 53. 21	42. 14. 26
21		33. 57. 36	32. 17. 50	30. 37. 59	28. 58. 5
22		20. 38. 13			
22	Pollux	64. 30. 41	62. 48. 28	61. 6. 3	59. 23. 26
23		50. 47. 20	49. 3. 30	47. 19. 30	45. 35. 18
24		36. 51. 40			
24	Regulus.	72. 52. 31	71. 6. 55	69. 21. 7	67. 35. 8
25		58. 42. 25	56. 55. 21	55. 8. 8	53. 20. 46
26		44. 21. 57	42. 33. 51	40. 45. 41	38. 57. 28
27		29. 56. 4	28. 7. 56	26. 19. 54	24. 32. 2
28	Spica $\kappa$	69. 26. 16	67. 37. 30	65. 48. 50	64. 0. 15
M1		54. 59. 8			



## IX. FEBRUARY 1779. [21]

Distances of  $\gamma$ 's Center from  $\odot$ , and from Stars east of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Spica $\mu$	55. 56. 12	54. 7. 4	52. 18. 19	50. 29. 56
2		41. 34. 9	39. 48. 22	38. 3. 8	36. 18. 26
3		27. 43. 54			
3	Antares.	73. 17. 25	71. 33. 59	59. 51. 0	68. 8. 28
4		59. 42. 26	58. 2. 35	56. 23. 11	54. 44. 13
5		46. 36. 8	44. 59. 50	43. 23. 59	41. 48. 34
6		33. 58. 2	32. 25. 14	30. 52. 54	29. 21. 3
7		21. 49. 26	20. 21. 0	18. 53. 20	17. 26. 28
5	The Sun.	116. 11. 29	114. 42. 13	113. 13. 19	111. 44. 48
6		104. 27. 36	103. 1. 12	101. 35. 6	100. 9. 20
7		93. 4. 55	91. 40. 51	90. 17. 1	88. 53. 26
8		81. 58. 54	80. 36. 35	79. 14. 26	77. 52. 26
9		71. 4. 42	69. 43. 31	68. 22. 25	67. 1. 25
10		60. 17. 30	58. 56. 52	57. 36. 16	56. 15. 41
11		49. 32. 55	48. 12. 21	46. 51. 45	45. 31. 8
12		38. 47. 28			
17	Aldebaran.	79. 26. 30	77. 51. 22	76. 16. 6	74. 40. 39
18		66. 40. 42	65. 4. 10	63. 27. 27	61. 50. 34
19		53. 43. 32	52. 5. 35	50. 27. 28	48. 49. 11
20		40. 35. 22	38. 56. 7	37. 16. 44	35. 37. 14
21		27. 18. 7	25. 38. 8	23. 58. 8	22. 18. 9
22	Pollux.	57. 40. 37	55. 57. 36	54. 14. 22	52. 30. 57
23		43. 50. 56	42. 6. 22	40. 21. 38	38. 36. 44
24	Regulus.	65. 48. 57	64. 2. 35	62. 16. 2	60. 29. 19
25		51. 33. 15	49. 45. 35	47. 57. 49	46. 9. 56
26		37. 9. 12	35. 20. 52	33. 32. 34	31. 44. 18
27		22. 44. 19			
27	Spica $\mu$	76. 41. 41	74. 52. 48	73. 3. 55	71. 15. 4
28		62. 11. 45	60. 23. 23	58. 35. 8	56. 47. 3

[22] FEBRUARY 1779. X.

Distances of J's Center from ☉, and from Stars west of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Pollux.	27. 33. 39	29. 23. 42	31. 13. 37	33. 3. 22
2		42. 8. 46	43. 57. 2	45. 44. 57	47. 32. 33
3		56. 25. 2			
3	Regulus.	20. 38. 1	22. 21. 35	24. 4. 59	25. 48. 8
4		34. 19. 56	36. 1. 19	37. 42. 20	39. 22. 59
5		47. 40. 25	49. 18. 44	50. 56. 40	52. 34. 13
6		60. 36. 17	62. 11. 36	63. 46. 35	65. 21. 13
7	Spica ♀	73. 9. 31			
7		19. 51. 14	21. 19. 41	22. 48. 16	24. 17. 1
8		31. 42. 13	33. 11. 13	34. 40. 10	36. 9. 3
9		43. 32. 23	45. 0. 48	46. 29. 8	47. 57. 25
10	Antares.	55. 17. 57	56. 45. 55	58. 13. 52	59. 41. 47
11		67. 1. 16			
11		21. 25. 2	22. 50. 41	24. 16. 35	25. 42. 46
12		32. 57. 22	34. 24. 52	35. 52. 32	37. 20. 22
13		44. 41. 51	46. 10. 36	47. 39. 31	49. 8. 35
14		56. 36. 16			
19				38. 41. 9	40. 10. 49
20		47. 42. 44	49. 13. 47	50. 45. 4	52. 16. 34
21	The Sun.	59. 57. 21	61. 30. 9	63. 3. 11	64. 36. 25
22		72. 25. 59	74. 0. 33	75. 35. 19	77. 10. 19
23		85. 8. 35	86. 44. 53	88. 21. 24	89. 58. 8
24		98. 4. 57	99. 42. 57	101. 21. 8	102. 59. 31
25	♈ Arietis.	111. 14. 16	112. 53. 45	114. 33. 23	116. 13. 12
24		40. 26. 17	42. 5. 31	43. 45. 20	45. 25. 45
25		53. 55. 9	55. 38. 18	57. 21. 43	59. 5. 28
26		36. 29. 14	38. 17. 1	40. 4. 59	41. 53. 8
27	Aldebaran.	50. 56. 2	52. 44. 56	54. 33. 53	56. 22. 54
28		65. 28. 24	67. 17. 28	69. 6. 30	70. 55. 27
M.1		79. 58. 59			

# XI. FEBRUARY 1779. [23]

Distances of  $\gamma$ 's Center from  $\odot$ , and from Stars west of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1 2	Pollux.	34. 52. 55 49. 19. 49	36. 42. 16 51. 6. 42	38. 31. 21 52. 53. 13	40. 20. 11 54. 39. 20
3 4 5 6	Regulus.	27. 31. 4 41. 3. 16 54. 11. 23 66. 55. 31	29. 13. 44 42. 43. 8 55. 48. 9 68. 29. 29	30. 56. 6 44. 22. 37 57. 24. 34 70. 3. 8	32. 38. 10 46. 1. 42 59. 0. 36 71. 36. 29
7 8 9 10	Spica $\mu$	25. 45. 57 37. 37. 54 49. 25. 38 61. 9. 41	27. 14. 58 39. 6. 38 50. 53. 47 62. 37. 34	28. 44. 1 40. 35. 17 52. 21. 53 64. 5. 28	30. 13. 6 42. 3. 52 53. 49. 56 65. 33. 22
11 12 13	Antares.	27. 9. 15 38. 48. 22 50. 37. 48	28. 35. 58 40. 16. 30 52. 7. 11	30. 2. 53 41. 44. 48 53. 36. 43	31. 30. 1 43. 13. 15 55. 6. 25
19 20 21 22 23 24 25	The Sun.	41. 40. 44 53. 48. 17 66. 9. 53 78. 45. 32 91. 35. 5 104. 38. 6 117. 53. 9	43. 10. 53 55. 20. 14 67. 43. 35 80. 20. 58 93. 12. 14 106. 16. 52 119. 33. 15	44. 41. 16 56. 52. 23 69. 17. 30 81. 56. 37 94. 49. 36 107. 55. 49 121. 13. 29	46. 11. 53 58. 24. 46 70. 51. 38 83. 32. 30 96. 27. 10 109. 34. 57
23 24 25	$\alpha$ Arietis.	33. 56. 53 47. 6. 45 60. 49. 34	35. 33. 5 48. 48. 12	37. 10. 0 50. 30. 5	38. 47. 44 52. 12. 24
25 26 27 28	Aldebaran.	29. 20. 27 43. 41. 28 58. 11. 59 72. 44. 22	31. 7. 16 45. 29. 56 60. 1. 5 74. 33. 11	32. 54. 20 47. 18. 31 61. 50. 11 76. 21. 54	34. 41. 40 49. 7. 13 63. 39. 18 78. 10. 30



[24] FEBRUARY 1779. XII.

Configurations of the SATELLITES of JUPITER  
at 11 o' Clock at Night.

1				$\frac{3}{2} \odot 4 \odot$		$\cdot 1$
2			4.	$\cdot 2 \cdot 1$	$\odot$	$\cdot 3$
3		4.			$\odot$	$\cdot 1 \cdot 2 \cdot 3$
4	$\frac{3}{2}$			$\cdot 1$	$\odot$	$\cdot 2 \cdot 3$
5	$\frac{1}{4}$			2.	$\odot$	10
6	$\cdot 4$		3.	$\cdot 2$	$\odot$	$\cdot 1$
7		$\cdot 4$	$\cdot 3$	$\cdot 1$	$\odot$	$\cdot 2$
8			$\cdot 4$	$\cdot 3$	$\odot$	$\cdot 1$
9			$\cdot 2$	$\cdot 1$	$\odot$	$\cdot 3$
10					$\odot$	$\cdot 2 \cdot 4 \cdot 3$
11				$\cdot 1$	$\odot$	$\cdot 2 \cdot 3 \cdot 4$
12	3●			2.	$\odot$	$\cdot 1$
13	1.0		3.	$\cdot 2$	$\odot$	$\cdot 4$
14		$\cdot 2$		$\cdot 1$	$\odot$	$\cdot 3$
15	2●			$\cdot 3$	$\odot$	$\cdot 1$
16			$\cdot 2$	$\cdot 1$	$\odot$	$\cdot 3$
17					$\odot$	$\cdot 2 \cdot 4 \cdot 3$
18			4.	$\cdot 1$	$\odot$	$\cdot 2 \cdot 3$
19	3●		4.	2.	$\odot$	$\cdot 1$
20		4.		3.	$\odot$	$\cdot 2 \cdot 1$
21	$\cdot 4$		$\cdot 3$		$\odot$	$\cdot 2$
22	$\cdot 4$		$\cdot 3$		$\odot$	$\cdot 1$
23	$\cdot 4$		2.	$\cdot 1$	$\odot$	$\cdot 3$
24		$\cdot 4$			$\odot$	$\cdot 2 \cdot 1 \cdot 3$
25			$\cdot 4 \cdot 1$		$\odot$	$\cdot 2 \cdot 3$
26				2.	$\odot$	$\cdot 4 \cdot 3 \cdot 1$
27			3.	$\cdot 2$	$\odot$	$\cdot 1$
28	1●		3.		$\odot$	$\cdot 2 \cdot 4$

I. MARCH 1779. [25]			Phases of the Moon.
Days of the Month.	Days of the Week.	Sundays, Holidays, &c.	D. H. M.
1	M.	David.	Full Moon — 2. 2. 12
2	Tu.	Chad.	Last Quarter — 9. 14. 42
3	W.		New Moon — 17. 14. 52
4	Th.		First Quarter — 24. 16. 31
5	F.		Full Moon — 31. 14. 1
6	Sa.		
7	Su.	3d Su. in Lent. Perpetua.	D. Other Phenomena.
8	M.		2. ☾ 18 6 <sup>h</sup> . 30 <sup>'</sup> .
9	Tu.		3. ☾ c ☿ 9 <sup>h</sup> . 26 <sup>'</sup> .
10	W.		☿ 1 <sup>h</sup> . 22 <sup>'</sup> diff. Lat. 1 <sup>'</sup> .
11	Th.		4. ☿ Stationary.
12	F.	Gregory M.	5. ☾ x ☿ 17 <sup>h</sup> . 5 <sup>'</sup> .
13	Sa.		7. ☾ 4 ad ☿ 8 <sup>h</sup> . 4 <sup>'</sup> .
			☾ ☿ 12 <sup>h</sup> . 7 <sup>'</sup> .
			☾ ☿ 17 <sup>h</sup> . 51 <sup>'</sup> .
			8. ☾ β ☿ 0 <sup>h</sup> . 2 <sup>'</sup> .
14	Su.	4th Sunday in Lent. Mid-	9. ☾ B Ophiuchi 14 <sup>h</sup> . 20 <sup>'</sup> .
15	M.	[Lent Sunday.	10. ☾ λ ♄ 18 <sup>h</sup> . 46 <sup>'</sup> .
16	Tu.		11. ☾ σ ♄ 7 <sup>h</sup> . 7 <sup>'</sup> .
17	W.		14. ☾ ε ♄ 10 <sup>h</sup> . 46 <sup>'</sup> .
18	Th.	Edw. K. of West. Sax.	18. ☿ ☿ ☿ diff. Lat. 53 <sup>'</sup> .
19	F.		20. ☾ enters ♄ at 5 <sup>h</sup> . 53 <sup>'</sup> .
20	Sa.		23. ☾ 1 ☿ 5 <sup>h</sup> . 11 <sup>'</sup> .
			24. ☾ ε ♄ 20 <sup>h</sup> . 42 <sup>'</sup> .
21	Su.	5th Sunday in Lent. Be-	25. ☾ x ♄ 20 <sup>h</sup> . 0 <sup>'</sup> .
22	M.	[nedit.	26. ☾ γ ☿ 19 <sup>h</sup> . 29 <sup>'</sup> .
23	Tu.		28. ☾ η ♄ 5 <sup>h</sup> . 56 <sup>'</sup> .
24	W.		29. ☾ 1 ♄ 15 <sup>h</sup> . 25 <sup>'</sup> .
25	Th.	Annunciation of V. Mary.	30. ☾ c ☿ 18 <sup>h</sup> . 48 <sup>'</sup> .
26	F.	Camb. Term ends.	
27	Sa.	Oxford Term ends.	
28	Su.	6th Sun. in Lent. Palm-	
29	M.	[Sunday.	
30	Tu.		
31	W.		



26]		M A R C H 1779.				II.
Days of the Month.	Days of the Week.	Sun's Longitude.	Sun's Right Asc. in Time.	Sun's Declin. South.	Equat. of Time. Add.	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
1	M.	11. 10. 49. 16	22. 49. 13, 2	7. 31. 4	12. 40, 3	12, 5
2	Tu.	11. 11. 49. 20	22. 52. 57, 2	7. 8. 13	12. 27, 8	13, 0
3	W.	11. 12. 49. 21	22. 56. 40, 7	6. 45. 16	12. 14, 8	13, 5
4	Th.	11. 13. 49. 21	23. 0. 23, 7	6. 22. 14	12. 1, 5	14, 0
5	F.	11. 14. 49. 19	23. 4. 6, 3	5. 59. 6	11. 47, 3	14, 4
6	Sa.	11. 15. 49. 15	23. 7. 48, 4	5. 35. 54	11. 32, 9	14, 7
7	Su.	11. 16. 49. 10	23. 11. 30, 2	5. 12. 37	11. 18, 2	15, 0
8	M.	11. 17. 49. 3	23. 15. 11, 6	4. 49. 15	11. 3, 2	15, 5
9	Tu.	11. 18. 48. 54	23. 18. 52, 6	4. 25. 50	10. 47, 7	15, 8
10	W.	11. 19. 48. 44	23. 22. 33, 4	4. 2. 21	10. 31, 9	16, 1
11	Th.	11. 20. 48. 32	23. 26. 13, 9	3. 38. 50	10. 15, 8	16, 4
12	F.	11. 21. 48. 18	23. 29. 53, 9	3. 15. 16	9. 59, 4	16, 7
13	Sa.	11. 22. 48. 3	23. 33. 33, 8	2. 51. 39	9. 42, 7	16, 9
14	Su.	11. 23. 47. 46	23. 37. 13, 4	2. 28. 0	9. 25, 8	17, 2
15	M.	11. 24. 47. 27	23. 40. 52, 7	2. 4. 20	9. 8, 6	17, 4
16	Tu.	11. 25. 47. 7	23. 44. 31, 8	1. 40. 38	8. 51, 2	17, 5
17	W.	11. 26. 46. 44	23. 48. 10, 8	1. 16. 56	8. 33, 7	17, 8
18	Th.	11. 27. 46. 19	23. 51. 49, 5	0. 53. 14	8. 15, 9	17, 9
19	F.	11. 28. 45. 53	23. 55. 28, 1	0. 29. 32	7. 58, 0	18, 1
20	Sa.	11. 29. 45. 24	23. 59. 6, 5	0. 5. 50	7. 39, 9	18, 3
21	Su.	0. 0. 44. 53	0. 2. 44, 7	0. 17. 52	7. 21, 6	18, 5
22	M.	0. 1. 44. 19	0. 6. 22, 8	0. 41. 32	7. 3, 1	18, 5
23	Tu.	0. 2. 43. 43	0. 10. 0, 8	1. 5. 10	6. 44, 6	18, 6
24	W.	0. 3. 43. 5	0. 13. 38, 7	1. 28. 47	6. 26, 0	18, 6
25	Th.	0. 4. 42. 24	0. 17. 16, 5	1. 52. 21	6. 7, 4	18, 7
26	F.	0. 5. 41. 41	0. 20. 54, 3	2. 15. 53	5. 48, 7	18, 8
27	Sa.	0. 6. 40. 56	0. 24. 32, 1	2. 39. 22	5. 29, 9	18, 7
28	Su.	0. 7. 40. 8	0. 28. 9, 9	3. 2. 47	5. 11, 2	18, 7
29	M.	0. 8. 39. 18	0. 31. 47, 7	3. 26. 9	4. 52, 5	18, 7
30	Tu.	0. 9. 38. 25	0. 35. 25, 5	3. 49. 26	4. 33, 8	18, 6
31	W.	0. 10. 37. 31	0. 39. 3, 4	4. 12. 40	4. 15, 2	

# III. MARCH 1779. [27]

Days of the Month.	Semidia- meter of the Sun.	Time of D <sup>o</sup> passing the Meridian.	Hourly Motion of the Sun.	Logarithm of the Sun's Distance.	Place of the Moon's Node.
	M. S.	M. S.	M. S.		S. D. M.
1	16. 10. 7	1. 5. 3	2. 30. 2	9. 996405	2. 16. 15
7	16. 9. 2	1. 4. 9	2. 29. 7	9. 997097	2. 15. 56
13	16. 7. 7	1. 4. 6	2. 29. 2	9. 997828	2. 15. 37
19	16. 6. 0	1. 4. 4	2. 28. 8	9. 998570	2. 15. 18
25	16. 4. 3	1. 4. 3	2. 28. 3	9. 999303	2. 14. 59

## Eclipses of the SATELLITES of J U P I T E R.

I. Satellite. Immersions.		II. Satellite. Immersions.		III. Satellite.	
Days	H. M. S.	Days	H. M. S.	Days	H. M. S.
2	5. 5. 17	1	14* 27. 10	5	18. 47. 47 I
3	23. 34. 13	5	3. 45. 2	13	1. 45. 14 E
5	18. 3. 8	8	17* 3. 3	20	5. 45. 6 E
7	12* 32. 8	12	6. 21. 14	27	9* 45. 12 E
9	7* 1. 7	Emerfions.		IV. Satellite.	
11	1. 30. 10	15	22. 13. 37		
	Emerfions.	19	11* 31. 53	6	9* 9. 32 I
12	22. 11. 55	23	0. 50. 14	6	12* 33. 8 E
14	16* 40. 59	26	14* 8. 43	23	3. 13. 14 I
16	11* 10. 0	30	3. 27. 13	23	6. 30. 28 E
18	5. 39. 6				
20	0. 8. 9				
21	18. 37. 18				
23	13* 6. 21				
25	7* 35. 31				
27	2. 4. 36				
28	20. 33. 47				
30	15* 2. 52				

[28] MARCH 1779. IV.

DAYS.	Heliocen- tric Lon- gitude.	Heliocen- tric Lati- tude.	Geocen- tric Lon- gitude.	Geocen- tric Lati- tude.	Declina- tion.	Passage over Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.

MERCURY. Sup.  $\delta$  25<sup>d</sup>. 14<sup>o</sup>.

1	9. 4. 59	5. 18 S	10. 21. 21	1. 57 S	16. 15 S	22. 51
4	9. 13. 42	5. 56	10. 26. 5	2. 4	14. 47	22. 58
7	9. 22. 46	6. 26	11. 0. 59	2. 11	13. 11	23. 6
10	10. 2. 19	6. 47	11. 6. 3	2. 12	11. 22	23. 15
13	10. 12. 29	6. 59	11. 11. 17	2. 10	9. 21	23. 24
16	10. 23. 25	6. 56	11. 16. 43	2. 4	7. 9	23. 33
19	11. 5. 16	6. 36	11. 22. 20	1. 52	4. 46	23. 42
22	11. 18. 11	5. 54	11. 28. 8	1. 35	2. 13 S	23. 53
25	0. 2. 22	4. 49	0. 4. 6	1. 15	0. 29 N	0. 3
28	0. 17. 53	3. 17	0. 10. 13	0. 49	3. 18	0. 11
31	1. 4. 45	1. 20	0. 16. 23	0. 20	6. 9	0. 22

VENUS. Gr. Elong. 16<sup>d</sup>.

1	6. 13. 24	2. 58 N	9. 25. 37	3. 55 N	17. 12 S	20. 58
7	6. 23. 4	2. 39	10. 0. 49	3. 14	16. 51	20. 58
13	7. 2. 42	2. 16	10. 6. 24	2. 34	16. 13	20. 59
19	7. 12. 19	1. 49	10. 12. 15	1. 54	15. 19	21. 1
25	7. 21. 54	1. 19	10. 18. 19	1. 18	14. 7	21. 4

MARS.

1	6. 16. 33	0. 58 N	7. 22. 2	1. 35 N	16. 46 S	16. 29
7	6. 19. 20	0. 54	7. 23. 54	1. 32	17. 18	16. 14
13	6. 22. 9	0. 49	7. 25. 33	1. 28	17. 45	15. 58
19	6. 24. 58	0. 44	7. 26. 55	1. 24	18. 7	15. 41
25	6. 27. 49	0. 39	7. 27. 56	1. 19	18. 26	15. 23

JUPITER.  $\delta$  12<sup>d</sup>. 14<sup>o</sup>.

1	5. 21. 33	1. 16 N	5. 23. 55	1. 32 N	3. 50 N	12. 49
7	5. 22. 0	1. 16	5. 23. 10	1. 33	4. 8	12. 24
13	5. 22. 27	1. 16	5. 22. 22	1. 33	4. 28	11. 59
19	5. 22. 54	1. 16	5. 21. 35	1. 33	4. 46	11. 34
25	5. 23. 22	1. 16	5. 20. 50	1. 33	5. 3	11. 9

SATURN.

1	7. 21. 24	2. 10 N	7. 25. 58	2. 14 N	17. 20 S	16. 49
7	7. 21. 35	2. 10	7. 26. 58	2. 15	17. 18	16. 27
13	7. 21. 47	2. 10	7. 26. 55	2. 16	17. 16	16. 5
19	7. 21. 58	2. 9	7. 26. 49	2. 17	17. 14	15. 43
25	7. 22. 0	2. 9	7. 26. 41	2. 18	17. 12	15. 20



V. MARCH 1779. [29]

Days of the Month.	Days of the Week.	Moon's Longitude at Noon.	Moon's Longitude at Midnight.	Moon's Latitude at Noon.	Moon's Latitude at Midn.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
1	M.	4. 26. 8. 30	5. 3. 23. 42	4. 41. 58 N	4. 52. 54 N
2	Tu.	5. 10. 35. 54	5. 17. 44. 15	4. 59. 2	5. 0. 25
3	W.	5. 24. 48. 3	6. 1. 46. 37	4. 57. 11	4. 49. 30
4	Th.	6. 8. 39. 23	6. 15. 26. 2	4. 37. 40	4. 22. 5
5	F.	6. 22. 6. 28	6. 28. 40. 35	4. 3. 4	3. 41. 4
6	Sa.	7. 5. 8. 32	7. 11. 30. 36	3. 16. 31	2. 49. 50
7	Su.	7. 17. 47. 6	7. 23. 58. 33	2. 21. 26	1. 51. 42
8	M.	8. 0. 5. 28	8. 6. 8. 27	1. 21. 1	0. 49. 43 N
9	Tu.	8. 12. 8. 13	8. 18. 5. 23	0. 18. 6 N	0. 13. 27 S
10	W.	8. 24. 0. 41	8. 29. 54. 48	0. 44. 44 S	1. 15. 25
11	Th.	9. 5. 48. 28	9. 11. 43. 21	1. 45. 14	2. 13. 55
12	F.	9. 17. 37. 6	9. 23. 33. 21	2. 41. 12	3. 6. 50
13	Sa.	9. 29. 31. 42	10. 5. 32. 33	3. 30. 32	3. 52. 3
14	Su.	10. 11. 36. 26	10. 17. 43. 40	4. 11. 5	4. 27. 25
15	M.	10. 23. 54. 38	11. 0. 9. 30	4. 40. 45	4. 50. 52
16	Tu.	11. 6. 28. 26	11. 12. 51. 25	4. 57. 32	5. 0. 34
17	W.	11. 19. 18. 23	11. 25. 49. 19	4. 59. 17	4. 55. 6
18	Th.	0. 2. 24. 0	0. 9. 2. 15	4. 46. 29	4. 33. 53
19	F.	0. 15. 43. 46	0. 22. 28. 18	4. 17. 26	3. 57. 14
20	Sa.	0. 29. 15. 32	1. 6. 5. 14	3. 33. 31	3. 6. 34
21	Su.	1. 12. 57. 3	1. 19. 50. 50	2. 36. 45	2. 4. 24
22	M.	1. 26. 46. 16	2. 3. 43. 18	1. 30. 5	0. 54. 15 S
23	Tu.	2. 10. 41. 42	2. 17. 41. 27	0. 17. 27 S	0. 19. 45 N
24	W.	2. 24. 42. 23	3. 1. 44. 32	0. 56. 47 N	1. 33. 3
25	Th.	3. 8. 47. 37	3. 15. 51. 44	2. 8. 0	2. 41. 2
26	F.	3. 22. 56. 38	4. 0. 2. 6	3. 11. 39	3. 39. 20
27	Sa.	4. 7. 7. 56	4. 14. 13. 47	4. 3. 39	4. 24. 9
28	Su.	4. 21. 19. 12	4. 28. 23. 51	4. 40. 36	4. 52. 40
29	M.	5. 5. 27. 5	5. 12. 28. 29	5. 0. 15	5. 3. 15
30	Tu.	5. 19. 27. 23	5. 26. 23. 18	5. 1. 41	4. 55. 40
31	W.	6. 3. 15. 42	6. 10. 4. 7	4. 45. 25	4. 31. 8

[30]		M A R C H 1779.				VI.	
Days of the Month.	Days of the Week.	D's Age.	D's Pass- age over Merid.	D's Right Ascen. at Noon.	D's Right Ascen. at Midn.	D's De- clinat. at Noon.	D's De- clination at Midn.
			H. M.	D. M.	D. M.	D. M.	D. M.
1	M.	15	11. 36	150. 3	157. 8	17. 14 N	14. 49 N
2	Tu.	16	12. 28	164. 2	170. 42	12. 12	9. 27
3	W.	17	13. 18	177. 12	183. 33	6. 37	3. 43 N
4	Th.	18	14. 5	189. 47	195. 54	0. 49 N	2. 3 S
5	F.	19	14. 51	201. 57	207. 58	4. 51 S	7. 34
6	Sa.	20	15. 37	213. 58	219. 58	10. 10	12. 36
7	Su.	21	16. 23	226. 0	232. 4	14. 53	16. 59
8	M.	22	17. 11	238. 13	244. 27	18. 52	20. 32
9	Tu.	23	17. 59	250. 43	257. 2	21. 58	23. 9
10	W.	24	18. 49	263. 25	269. 54	24. 4	24. 43
11	Th.	25	19. 39	276. 25	282. 57	25. 5	25. 10
12	F.	26	20. 29	289. 29	296. 0	24. 58	24. 29
13	Sa.	27	21. 19	302. 30	308. 56	23. 42	22. 39
14	Su.	28	22. 7	315. 19	321. 37	21. 20	19. 46
15	M.	29	22. 54	327. 51	334. 1	17. 58	15. 58
16	Tu.	30	23. 40	340. 7	346. 10	13. 45	11. 22
17	W.	1	0	352. 9	358. 7	8. 50	6. 10
18	Th.	2	0. 25	4. 6	10. 6	3. 25 S	0. 37 S
19	F.	3	1. 11	16. 9	22. 15	2. 14 N	5. 5 N
20	Sa.	4	1. 59	28. 28	34. 49	7. 54	10. 38
21	Su.	5	2. 48	41. 18	47. 59	13. 15	15. 43
22	M.	6	3. 41	54. 50	61. 53	18. 0	20. 2
23	Tu.	7	4. 37	69. 9	76. 35	21. 47	23. 13
24	W.	8	5. 37	84. 11	91. 55	24. 18	25. 0
25	Th.	9	6. 38	99. 44	107. 34	25. 18	25. 12
26	F.	10	7. 39	115. 21	123. 4	24. 40	23. 44
27	Sa.	11	8. 38	130. 39	138. 4	22. 26	20. 47
28	Su.	12	9. 33	145. 18	152. 19	18. 50	16. 37
29	M.	13	10. 26	159. 10	165. 49	14. 10	11. 33
30	Tu.	14	11. 16	172. 18	178. 39	8. 48	5. 57
31	W.	15	12. 3	184. 52	191. 2	3. 4	0. 10



VII. MARCH 1779. [31]

Days of the Month.	Days of the Week.	Semid. at Noon.	Semid. at Mid-night.	Hor. Par. at Noon.	Hor. Par. at Midnight.	Proport. Log. at Noon.	Proport. Log. at Midn.
1	M.	16. 19	16. 16	59. 54	59. 43	4778	4792
2	Tu.	16. 12	16. 8	59. 29	59. 11	4809	4831
3	W.	16. 2	15. 56	58. 51	58. 30	4855	4881
4	Th.	15. 50	15. 43	58. 7	57. 42	4910	4941
5	F.	15. 37	15. 30	57. 18	56. 53	4971	5003
6	Sa.	15. 24	15. 18	56. 31	56. 8	5031	5060
7	Su.	15. 12	15. 7	55. 46	55. 28	5089	5112
8	M.	15. 2	14. 58	55. 11	54. 56	5134	5154
9	Tu.	14. 55	14. 52	54. 44	54. 34	5170	5183
10	W.	14. 50	14. 49	54. 27	54. 22	5193	5199
11	Th.	14. 48	14. 49	54. 20	54. 21	5202	5201
12	F.	14. 50	14. 51	54. 24	54. 29	5197	5190
13	Sa.	14. 53	14. 56	54. 37	54. 47	5179	5166
14	Su.	14. 59	15. 2	54. 58	55. 11	5152	5134
15	M.	15. 6	15. 10	55. 25	55. 41	5116	5095
16	Tu.	15. 15	15. 19	55. 57	56. 14	5075	5053
17	W.	15. 24	15. 29	56. 30	56. 48	5032	5009
18	Th.	15. 33	15. 37	57. 4	57. 20	4989	4968
19	F.	15. 42	15. 46	57. 37	57. 51	4947	4930
20	Sa.	15. 50	15. 53	58. 5	58. 18	4912	4896
21	Su.	15. 56	15. 59	58. 30	58. 40	4881	4869
22	M.	16. 2	16. 4	58. 50	58. 58	4856	4846
23	Tu.	16. 6	16. 8	59. 5	59. 11	4838	4831
24	W.	16. 9	16. 10	59. 17	59. 21	4823	4819
25	Th.	16. 11	16. 11	59. 24	59. 25	4815	4813
26	F.	16. 12	16. 12	59. 26	59. 26	4812	4812
27	Sa.	16. 11	16. 10	59. 24	59. 19	4815	4821
28	Su.	16. 9	16. 7	59. 14	59. 7	4827	4835
29	M.	16. 4	16. 1	58. 59	58. 48	4845	4859
30	Tu.	15. 58	15. 54	58. 36	58. 21	4874	4892
31	W.	15. 50	15. 45	58. 6	57. 48	4911	4933

Distances of  $\beta$ 's Center from  $\odot$ , and from Stars east of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Spica $\mu$	54. 59. 9	53. 11. 25	51. 23. 53	49. 36. 34
2		40. 44. 0	38. 58. 25	37. 13. 14	35. 28. 28
3		26. 51. 40	25. 10. 9	23. 29. 22	21. 49. 23
4	Antares.	58. 40. 41	56. 59. 19	55. 18. 21	53. 37. 45
5		45. 20. 52	43. 42. 43	42. 4. 59	40. 27. 42
6		32. 27. 45	30. 53. 9	29. 19. 1	27. 45. 23
7	$\alpha$ Aquilæ.	72. 11. 49	70. 54. 55	69. 38. 33	68. 22. 44
8		62. 12. 26	61. 0. 18	59. 48. 51	58. 38. 7
9	Fomal-	79. 29. 15	78. 3. 7	76. 37. 10	75. 11. 24
10	haut.	68. 5. 5			
7	The Sun.	119. 0. 27	117. 34. 52	116. 9. 33	114. 44. 30
8		107. 43. 17	106. 19. 46	104. 56. 27	103. 33. 21
9		96. 40. 41	95. 18. 40	93. 56. 47	92. 35. 2
10		85. 48. 4	84. 26. 58	83. 5. 55	81. 44. 55
11		75. 0. 30	73. 39. 40	72. 18. 49	70. 57. 56
12		64. 13. 2	62. 51. 53	61. 30. 38	60. 9. 19
13		53. 21. 9	51. 59. 11	50. 37. 5	49. 14. 50
14		42. 21. 25	40. 58. 18	39. 35. 0	
20	Aldeba-	37. 21. 57	35. 40. 44	33. 59. 27	32. 18. 8
21		23. 51. 26	22. 10. 27	20. 29. 42	18. 49. 18
22	Pollux.	53. 55. 8	52. 11. 0	50. 26. 47	48. 42. 29
23		39. 59. 56	38. 15. 15	36. 30. 32	34. 45. 46
24	Regulus.	62. 3. 8	60. 17. 43	58. 32. 16	56. 46. 46
25		47. 58. 58	46. 13. 20	44. 27. 43	42. 42. 6
26		33. 54. 28	32. 9. 7	30. 23. 51	28. 38. 45
27		19. 56. 22			
27	Spica $\mu$	73. 50. 4	72. 4. 22	70. 18. 43	68. 33. 7
28		59. 46. 11	58. 1. 2	56. 16. 0	54. 31. 5
29		45. 48. 42	44. 4. 43	42. 20. 58	40. 37. 26
30		32. 3. 53			
30	Antares.	77. 43. 18	75. 59. 51	74. 16. 36	72. 33. 33
31		64. 1. 32	62. 19. 51	60. 38. 26	58. 57. 16
A. 1		50. 35. 35			

IX. MARCH 1779. [33]

Distances of  $\gamma$ 's Center from  $\odot$ , and from Stars east of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Spica $\kappa$	47. 49. 29	46. 2. 39	44. 16. 8	42. 29. 55
2		33. 44. 6	32. 0. 10	30. 16. 44	28. 33. 53
3		20. 10. 15			
3	Antares.	65. 30. 0	63. 47. 6	62. 4. 35	60. 22. 26
4		51. 57. 35	50. 17. 48	48. 38. 24	46. 59. 26
5		38. 50. 49	37. 14. 22	35. 38. 22	34. 2. 50
6		26. 12. 15			
6	$\alpha$ Aquilæ.	77. 24. 23	76. 5. 32	74. 47. 9	73. 29. 14
7		67. 7. 28	65. 52. 47	64. 38. 42	63. 25. 15
8		57. 28. 7			
8	Fomalhaut.	85. 15. 45	83. 48. 49	82. 22. 6	80. 55. 34
9		73. 45. 49	72. 20. 24	70. 55. 8	69. 30. 2
7	The Sun.	113. 19. 46	111. 55. 17	110. 31. 3	109. 7. 3
8		102. 10. 27	100. 47. 45	99. 25. 13	98. 2. 52
9		91. 13. 26	89. 51. 57	88. 30. 33	87. 9. 16
10		80. 23. 59	79. 3. 5	77. 42. 12	76. 21. 20
11		69. 37. 3	68. 16. 7	66. 55. 9	65. 34. 7
12		58. 47. 54	57. 26. 23	56. 4. 45	54. 43. 0
13		47. 52. 28	46. 29. 56	45. 7. 15	43. 41. 24
19	Aldebaran.	44. 5. 37	42. 24. 55	40. 44. 4	39. 3. 4
20		30. 36. 45	28. 55. 16	27. 13. 54	25. 32. 37
21		17. 9. 13			
21	Pollux.	60. 50. 33	59. 6. 52	57. 23. 4	55. 39. 10
22		46. 58. 6	45. 13. 39	43. 29. 8	41. 44. 34
23		33. 0. 59			
23	Regulus.	69. 4. 11	67. 19. 1	65. 32. 47	63. 48. 30
24		55. 1. 14	53. 15. 41	51. 30. 8	49. 44. 33
25		40. 56. 30	39. 10. 54	37. 25. 22	35. 39. 53
26		26. 53. 48	25. 9. 41	23. 24. 33	21. 40. 20
27	Spica $\kappa$	66. 47. 35	65. 2. 71	63. 16. 43	61. 31. 25
28		52. 46. 17	51. 1. 38	49. 17. 10	47. 32. 51
29		38. 54. 8	37. 11. 71	35. 28. 24	33. 45. 57
30	Antares.	70. 50. 42	69. 8. 41	67. 25. 39	65. 43. 29
31		57. 16. 21	55. 35. 45	53. 55. 25	52. 15. 22



[34]

MARCH 1779.

X.

Distances of  $\gamma$ 's Center from  $\odot$ , and from Stars west of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Pollux.	35. 50. 17	37. 38. 18	39. 26. 13	41. 13. 59
2		50. 10. 24	51. 57. 4	53. 43. 31	55. 29. 41
3		64. 16. 33			
3	Regulus.	28. 21. 26	30. 5. 0	31. 48. 21	33. 31. 27
4		42. 2. 54	43. 44. 16	45. 25. 18	47. 6. 0
5		55. 24. 22	57. 2. 59	58. 41. 14	60. 19. 8
6		68. 23. 22	69. 59. 11	71. 34. 39	73. 9. 48
7	Spica $\mu$	27. 22. 16	28. 53. 19	30. 24. 19	31. 55. 15
8		39. 28. 6	40. 58. 13	42. 28. 11	43. 58. 1
9		51. 25. 6	52. 54. 7	54. 23. 1	55. 51. 49
10		63. 14. 24	64. 42. 42	66. 10. 58	67. 39. 10
11	Antares.	29. 12. 53	30. 40. 1	32. 7. 18	33. 34. 43
12		40. 53. 43	42. 21. 53	43. 50. 12	45. 18. 39
13		52. 43. 8	54. 12. 30	55. 42. 2	57. 11. 45
14		64. 43. 7	66. 13. 59	67. 45. 4	69. 16. 21
15		76. 56. 15	78. 28. 54	80. 1. 47	81. 34. 55
16		89. 24. 18			
21	The Sun.	42. 16. 6	43. 51. 23	45. 26. 50	47. 2. 28
22		55. 2. 45	56. 39. 14	58. 15. 52	59. 52. 37
23		67. 57. 59	69. 35. 22	71. 12. 51	72. 50. 25
24		80. 59. 22	82. 37. 23	84. 15. 28	85. 53. 37
25		94. 5. 3	95. 43. 29	97. 21. 57	99. 0. 28
26		107. 13. 17	108. 51. 54	110. 30. 30	112. 9. 5
27		120. 21. 56			
25	Aldebaran.	32. 57. 3	34. 42. 2	36. 27. 8	38. 12. 23
26		47. 0. 0	48. 45. 43	50. 31. 28	52. 17. 15
27		61. 6. 30	62. 52. 22	64. 38. 12	66. 24. 1
28		75. 12. 33			
28	Pollux.	31. 3. 15	32. 48. 28	34. 33. 39	36. 18. 47
29		45. 3. 40	46. 48. 24	48. 33. 2	50. 17. 32
30		58. 58. 0			
30	Regulus.	23. 7. 5	24. 49. 8	26. 31. 11	28. 13. 14
31		36. 42. 17	38. 23. 39	40. 4. 51	41. 45. 52
A. 1		50. 7. 38			



XI. MARCH 1779. [35]

Distances of  $\gamma$ 's Center from  $\odot$ , and from Stars west of her.

Days	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Pollux.	43. 1. 37	44. 49. 6	46. 36. 23	48. 23. 29
2		57. 15. 37	59. 1. 16	60. 46. 39	62. 31. 45
3	Regulus.	35. 14. 18	36. 56. 54	38. 39. 11	40. 21. 12
4		48. 46. 22	50. 26. 23	52. 6. 4	53. 45. 23
5		61. 56. 41	63. 33. 52	65. 10. 43	66. 47. 13
6		74. 44. 37			
6	Spica $\alpha$	21. 18. 17	22. 49. 13	24. 20. 11	25. 51. 12
7		33. 26. 7	34. 56. 49	36. 27. 22	37. 57. 48
8		45. 27. 42	46. 57. 15	48. 26. 40	49. 55. 57
9		57. 20. 30	58. 49. 5	60. 17. 36	61. 46. 2
10	Antares.	69. 7. 21			
10		23. 25. 57	24. 52. 26	26. 19. 5	27. 45. 54
11		35. 2. 17	36. 29. 57	37. 57. 45	39. 25. 40
12		46. 47. 14	48. 15. 58	49. 44. 52	51. 13. 55
13		58. 41. 38	60. 11. 43	61. 41. 59	63. 12. 27
14		70. 47. 52	72. 19. 37	73. 51. 36	75. 23. 49
15		83. 8. 17	84. 41. 55	86. 15. 46	87. 49. 54
20	The Sun.			39. 6. 9	40. 41. 2
21		48. 38. 15	50. 14. 9	51. 50. 12	53. 26. 24
22		61. 29. 30	63. 6. 28	64. 43. 32	66. 20. 42
23		74. 28. 4	76. 5. 47	77. 43. 34	79. 21. 26
24		87. 31. 50	89. 10. 4	90. 48. 21	92. 26. 41
25		100. 39. 0	102. 17. 33	103. 56. 8	105. 34. 42
26	Aldeba- ran.	113. 47. 40	115. 26. 16	117. 4. 51	118. 43. 23
24		25. 59. 3	27. 43. 14	29. 27. 39	31. 12. 15
25		39. 57. 47	41. 43. 14	43. 28. 45	45. 14. 20
26		54. 3. 4	55. 48. 55	57. 34. 46	59. 20. 38
27	Pollux.	68. 0. 49	69. 55. 35	71. 41. 17	73. 26. 57
28		38. 3. 54	39. 48. 57	41. 33. 56	43. 18. 50
29	Regulus.	52. 1. 56	53. 46. 11	55. 30. 17	57. 14. 14
30		29. 55. 14	31. 37. 10	33. 19. 0	35. 0. 42
31		43. 26. 40	45. 7. 17	46. 47. 38	48. 27. 45

Configurations of the SATELLITES of JUPITER at  
10 o' Clock at Night.

1	1.0	.3	⊙	2.	.4
2	3.0	2.	1. ⊙		4.
3	2.0		⊙	.1	.3
4		1.	⊙	2.	3.
5		2.	⊙	1 6 3 4.	
6	4.	.2 .1	⊙		
7		3. 4.	⊙	1.	.2
8	1.0	4.	⊙	2.	
9	4.	2.	1. ⊙		3.0
10	4.		⊙	.1	.3
11	.4	1.	⊙	.2	3.
12	.4	2.	⊙	.1	3.
13		.4 .2 .1	⊙		
14		3.	⊙	1.	.2
15		.3	⊙	.4	2.
16	1.0	2.	⊙	.4	
17		.2	⊙	.1	.3
18		1.	⊙	.2	3.
19	2.0		⊙	.1	3.
20		.2 .1	⊙		4.
21		3.	⊙	.2	1.
22		.1	⊙	2 6 4	
23		2. .3	⊙	1.	
24	1.0	4.	⊙	.2	.3
25		4.	⊙	1.	.2
26	4.		⊙	2.	.1
27	.4	.2	⊙	1.	3.
28	.4	3.	⊙	.2	1.
29		.4 .3	⊙	.1	2.
30		.4 .2 .1	⊙	1.	
31	1.0 4.0	.2	⊙	.3	

I.		A P R I L 1779.		[37]
Days of the Month.	Days of the Week.	Sundays, Holidays, &c.	Phases of the Moon.	
			D. H. M.	
1	Th.		Last Quarter —	8. 10. 52
2	F.	Good Friday.	New Moon —	16. 3. 16
3	Sa.	Richard, Bp. of Chich.	First Quarter —	22. 22. 40
			Full Moon —	30. 2. 51
4	Su.	Easter-Day. St. Ambr.	D. Other Phenomena.	
5	M.	Easter-Monday.	3. $\zeta$ 4' $\approx$ 17 <sup>h</sup> . 10'. Diff.	
6	Tu.	Easter-Tuesday.	Lat. 27'.	
7	W.		4. $\zeta$ 6 <sup>h</sup> . 10'.	
8	Th.		$\zeta$ $\beta$ $\mu$ 8 <sup>h</sup> . 55'.	
9	F.		$\zeta$ $\nu$ $\mu$ 11 <sup>h</sup> . 44'. D.L. 38'.	
10	Sa.		5. $\zeta$ $\beta$ Ophiuc. 22 <sup>h</sup> . 55'.	
			7. $\zeta$ $\lambda$ $\tau$ 2 <sup>h</sup> . 58'. D.L. 18'.	
11	Su.	1 <sup>st</sup> Sunday after Easter.	8. $\zeta$ $\psi$ 7 <sup>h</sup> . 46'. D.L. 14'.	
12	M.	[Low-Sunday.	9. $\zeta$ 19 <sup>h</sup> . 55'. D.L. 34'.	
13	Tu.		10. $\zeta$ $\epsilon$ $\nu$ 19 <sup>h</sup> . 21'. D.L. 20'.	
14	W.	Oxf. and Camb. Terms	12. $\zeta$ 27 $\approx$ 6 <sup>h</sup> . 58'. D. L.	
15	Th.	[begin.	34'.	
16	F.		17. $\zeta$ $\phi$ $\approx$ 21 <sup>h</sup> . 36'. D.L.	
17	Sa.		19'. 32'.	
			19. $\odot$ enters $\gamma$ at 18 <sup>h</sup> . 42'.	
18	Su.	2 <sup>d</sup> Sunday after Easter.	$\zeta$ $\lambda$ $\approx$ D.L. 29'.	
19	M.	Alphege. From East. in	20. $\zeta$ 132 8 <sup>h</sup> . 25'. D.L.	
20	Tu.	[2 weeks, 1 ret.	0'. 20''.	
21	W.	Term begins.	21. $\zeta$ $\epsilon$ $\Pi$ 2 <sup>h</sup> . 55'. D. L.	
22	Th.		10'.	
23	F.	St. George.	24. $\zeta$ $\eta$ $\Omega$ 1 <sup>h</sup> . 54'.	
24	Sa.		29. $\zeta$ $\kappa$ $\mu$ Im. 9 <sup>h</sup> . 13'.	
			* 9 <sup>h</sup> $\frac{1}{2}$ N. of $\gamma$ 's cent.	
25	Su.	3 <sup>d</sup> S. aft. East. St. Mark.	Em. 10 <sup>h</sup> . 0'. * 13' N.	
26	M.	From East. in 3 w. 2 ret.	of $\gamma$ 's center.	
27	Tu.			
28	W.			
29	Th.			
30	F.			



[40]                      A P R I L 1779.                      IV.

Days.	Heliocentric Longitude.	Heliocentric Latitude.	Geocentric Longitude.	Geocentric Latitude.	Declination.	Passage over Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.

M E R C U R Y. Greatest Elong. 21<sup>d</sup>.

1	1. 10. 39	0. 38 S	0. 18. 28	0. 9 S	7. 6 N	0. 26
4	1. 28. 58	1. 35 N	0. 24. 36	0. 24 N	9. 55	0. 37
7	2. 17. 52	3. 43	1. 0. 31	0. 58	12. 34	0. 48
10	3. 6. 41	5. 26	1. 6. 4	1. 31	14. 59	0. 58
13	3. 24. 48	6. 31	1. 11. 7	2. 0	17. 5	1. 6
16	4. 11. 44	6. 58	1. 15. 32	2. 23	18. 48	1. 12
19	4. 27. 15	6. 51	1. 19. 15	2. 40	20. 7	1. 15
22	5. 11. 21	6. 19	1. 22. 12	2. 48	21. 2	1. 16
25	5. 24. 8	5. 30	1. 24. 20	2. 46	21. 34	1. 14
28	6. 5. 48	4. 31	1. 25. 39	2. 34	21. 42	1. 8

V E N U S.

1	8. 3. 3	0. 41 N	10. 25. 38	0. 38 N	12. 24 S	21. 8
7	8. 12. 34	0. 7 N	11. 2. 4	0. 6 N	10. 39	21. 12
13	8. 22. 5	0. 26 S	11. 8. 37	0. 22 S	8. 41	21. 15
19	9. 1. 35	0. 59	11. 15. 17	0. 47	6. 31	21. 19
25	9. 11. 4	1. 31	11. 22. 1	1. 8	4. 12	21. 22

M A R S.

1	7. 1. 10	0. 33 N	7. 28. 40	1. 11 N	18. 44 S	15. 2
7	7. 4. 5	0. 27	7. 28. 53	1. 3	18. 54	14. 41
13	7. 7. 0	0. 22	7. 28. 36	0. 53	19. 0	14. 18
19	7. 9. 57	0. 16	7. 27. 53	0. 41	19. 2	13. 52
25	7. 12. 55	0. 10	7. 26. 42	0. 28	19. 0	13. 25

J U P I T E R.

1	5. 23. 54	1. 17 N	5. 20. 1	1. 33 N	5. 23 N	10. 41
7	5. 24. 21	1. 17	5. 19. 23	1. 32	5. 37	10. 17
13	5. 24. 49	1. 17	5. 18. 48	1. 31	5. 50	9. 53
19	5. 25. 16	1. 17	5. 18. 19	1. 30	6. 1	9. 29
25	5. 25. 43	1. 17	5. 17. 55	1. 29	6. 9	9. 5

S A T U R N.

1	7. 22. 22	2. 9 N	7. 26. 26	2. 19 N	17. 8 S	14. 54
7	7. 22. 33	2. 9	7. 26. 9	2. 20	17. 3	14. 31
13	7. 22. 44	2. 8	7. 25. 50	2. 21	16. 58	14. 8
19	7. 22. 55	2. 8	7. 25. 29	2. 21	16. 52	13. 44
25	7. 23. 6	2. 8	7. 25. 5	2. 22	16. 46	13. 20



V. APRIL 1779. [41]

Days of the Month.	Days of the Week.	Moon's Longitude at Noon.	Moon's Longitude at Midnight.	Moon's Latitude at Noon.	Moon's Latitude at Midn.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
1	Th.	6. 16. 48. 8	6. 23. 27. 28	4. 13. 15 N	3. 52. 7 N
2	F.	7. 0. 1. 58	7. 6. 31. 28	3. 27. 59	3. 1. 23
3	Sa.	7. 12. 56. 0	7. 19. 15. 40	2. 32. 50	2. 2. 41
4	Su.	7. 25. 30. 43	8. 1. 41. 25	1. 31. 22	0. 59. 17 N
5	M.	8. 7. 48. 8	8. 13. 51. 25	0. 26. 50 N	0. 5. 40 S
6	Tu.	8. 19. 51. 39	8. 25. 49. 31	0. 37. 51 S	1. 9. 28
7	W.	9. 1. 45. 33	9. 7. 40. 30	1. 40. 8	2. 9. 40
8	Th.	9. 13. 34. 56	9. 19. 29. 34	2. 37. 46	3. 4. 12
9	F.	9. 25. 25. 3	10. 1. 22. 5	3. 28. 42	3. 51. 3
10	Sa.	10. 7. 21. 14	10. 13. 23. 12	4. 10. 59	4. 28. 18
11	Su.	10. 19. 28. 26	10. 25. 37. 30	4. 42. 44	4. 54. 7
12	M.	11. 1. 50. 51	11. 8. 8. 47	5. 2. 5	5. 6. 33
13	Tu.	11. 14. 31. 38	11. 20. 59. 34	5. 7. 16	5. 4. 9
14	W.	11. 27. 32. 36	0. 4. 10. 46	4. 56. 57	4. 45. 42
15	Th.	0. 10. 53. 53	0. 17. 41. 44	4. 30. 23	4. 11. 4
16	F.	0. 24. 34. 0	1. 1. 30. 11	3. 47. 53	3. 21. 7
17	Sa.	1. 8. 29. 52	1. 15. 32. 29	2. 51. 3	2. 18. 8
18	Su.	1. 22. 37. 29	1. 29. 44. 17	1. 42. 52	1. 5. 48 S
19	M.	2. 6. 52. 22	2. 14. 1. 11	0. 27. 33 S	0. 11. 14 N
20	Tu.	2. 21. 10. 18	2. 28. 19. 20	0. 49. 54 N	1. 27. 49
21	W.	3. 5. 27. 50	3. 12. 35. 36	2. 4. 19	2. 38. 49
22	Th.	3. 19. 42. 17	3. 26. 47. 45	3. 10. 46	3. 39. 41
23	F.	4. 3. 51. 42	4. 10. 54. 44	4. 5. 10	4. 26. 50
24	Sa.	4. 17. 54. 34	4. 24. 53. 5	4. 44. 23	4. 57. 38
25	Su.	5. 1. 49. 23	5. 8. 43. 21	5. 6. 27	5. 10. 46
26	M.	5. 15. 34. 42	5. 22. 23. 22	5. 10. 35	5. 6. 2
27	Tu.	5. 29. 8. 59	6. 5. 51. 29	4. 57. 13	4. 44. 23
28	W.	6. 12. 30. 40	6. 19. 6. 25	4. 27. 46	4. 7. 47
29	Th.	6. 25. 38. 32	7. 2. 6. 52	3. 44. 33	3. 18. 43
30	F.	7. 8. 31. 42	7. 14. 52. 41	2. 50. 31	2. 20. 28

Days.	Heliocentric Longitude.	Heliocentric Latitude.	Geocentric Longitude.	Geocentric Latitude.	Declination.	Passage over Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.

MERCURY. Greatest Elong. 21<sup>h</sup>.

1	1. 10. 39	0. 38 S	0. 18. 28	0. 9 S	7. 6 N	0. 26
4	1. 28. 58	1. 35 N	0. 24. 36	0. 24 N	9. 55	0. 37
7	2. 17. 52	3. 43	1. 0. 31	0. 58	12. 34	0. 48
10	3. 6. 41	5. 26	1. 6. 4	1. 31	14. 59	0. 58
13	3. 24. 48	6. 31	1. 11. 7	2. 0	17. 5	1. 6
16	4. 11. 44	6. 58	1. 15. 32	2. 23	18. 48	1. 12
19	4. 27. 15	6. 51	1. 19. 15	2. 40	20. 7	1. 15
22	5. 11. 21	6. 19	1. 22. 12	2. 48	21. 2	1. 16
25	5. 24. 8	5. 30	1. 24. 20	2. 46	21. 34	1. 14
28	6. 5. 48	4. 31	1. 25. 39	2. 34	21. 42	1. 8

## VENUS.

1	8. 3. 3	0. 41 N	10. 25. 38	0. 38 N	12. 24 S	21. 8
7	8. 12. 34	0. 7 N	11. 2. 4	0. 6 N	10. 39	21. 12
13	8. 22. 5	0. 26 S	11. 8. 37	0. 22 S	8. 41	21. 15
19	9. 1. 35	0. 59	11. 15. 17	0. 47	6. 31	21. 19
25	9. 11. 4	1. 31	11. 22. 1	1. 8	4. 12	21. 22

## MARS.

1	7. 1. 10	0. 33 N	7. 28. 40	1. 11 N	18. 44 S	15. 2
7	7. 4. 5	0. 27	7. 28. 53	1. 3	18. 54	14. 41
13	7. 7. 0	0. 22	7. 28. 36	0. 53	19. 0	14. 18
19	7. 9. 57	0. 16	7. 27. 53	0. 41	19. 2	13. 52
25	7. 12. 55	0. 10	7. 26. 42	0. 28	19. 0	13. 25

## JUPITER.

1	5. 23. 54	1. 17 N	5. 20. 1	1. 33 N	5. 23 N	10. 41
7	5. 24. 21	1. 17	5. 19. 23	1. 32	5. 37	10. 17
13	5. 24. 49	1. 17	5. 18. 48	1. 31	5. 50	9. 53
19	5. 25. 16	1. 17	5. 18. 19	1. 30	6. 1	9. 29
25	5. 25. 43	1. 17	5. 17. 55	1. 29	6. 9	9. 5

## SATURN.

1	7. 22. 22	2. 9 N	7. 26. 26	2. 19 N	17. 8 S	14. 54
7	7. 22. 33	2. 9	7. 26. 9	2. 20	17. 3	14. 31
13	7. 22. 44	2. 8	7. 25. 50	2. 21	16. 58	14. 8
19	7. 22. 55	2. 8	7. 25. 29	2. 21	16. 52	13. 44
25	7. 23. 6	2. 8	7. 25. 5	2. 22	16. 46	13. 20



V.		A P R I L 1779.				[41]
Days of the Month.	Days of the Week.	Moon's Longitude at Noon.	Moon's Longitude at Midnight.	Moon's Latitude at Noon.	Moon's Latitude at Midn.	
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.	
1	Th.	6. 16. 48. 8	6. 23. 27. 28	4. 13. 15 N	3. 52. 7 N	
2	F.	7. 0. 1. 58	7. 6. 31. 28	3. 27. 59	3. 1. 23	
3	Sa.	7. 12. 56. 0	7. 19. 15. 40	2. 32. 50	2. 2. 41	
4	Su.	7. 25. 30. 43	8. 1. 41. 25	1. 31. 22	0. 59. 17 N	
5	M.	8. 7. 48. 8	8. 13. 51. 25	0. 26. 50 N	0. 5. 40 S	
6	Tu.	8. 19. 51. 39	8. 25. 49. 31	0. 37. 51 S	1. 9. 28	
7	W.	9. 1. 45. 33	9. 7. 40. 30	1. 40. 8	2. 9. 40	
8	Th.	9. 13. 34. 56	9. 19. 29. 34	2. 37. 46	3. 4. 12	
9	F.	9. 25. 25. 3	10. 1. 22. 5	3. 28. 42	3. 51. 3	
10	Sa.	10. 7. 21. 14	10. 13. 23. 12	4. 10. 59	4. 28. 18	
11	Su.	10. 19. 28. 26	10. 25. 37. 30	4. 42. 44	4. 54. 7	
12	M.	11. 1. 50. 51	11. 8. 8. 47	5. 2. 5	5. 6. 33	
13	Tu.	11. 14. 31. 38	11. 20. 59. 34	5. 7. 16	5. 4. 9	
14	W.	11. 27. 32. 36	0. 4. 10. 46	4. 56. 57	4. 45. 42	
15	Th.	0. 10. 53. 53	0. 17. 41. 44	4. 30. 23	4. 11. 4	
16	F.	0. 24. 34. 0	1. 1. 30. 11	3. 47. 53	3. 21. 7	
17	Sa.	1. 8. 29. 52	1. 15. 32. 29	2. 51. 3	2. 18. 8	
18	Su.	1. 22. 37. 29	1. 29. 44. 17	1. 42. 52	1. 5. 48 S	
19	M.	2. 6. 52. 22	2. 14. 1. 11	0. 27. 33 S	0. 11. 14 N	
20	Tu.	2. 21. 10. 18	2. 28. 19. 20	0. 49. 54 N	1. 27. 49	
21	W.	3. 5. 27. 50	3. 12. 35. 36	2. 4. 19	2. 38. 49	
22	Th.	3. 19. 42. 17	3. 26. 47. 45	3. 10. 46	3. 39. 41	
23	F.	4. 3. 51. 42	4. 19. 54. 44	4. 5. 10	4. 26. 50	
24	Sa.	4. 17. 54. 34	4. 24. 53. 5	4. 44. 23	4. 57. 38	
25	Su.	5. 1. 49. 23	5. 8. 43. 21	5. 6. 27	5. 10. 46	
26	M.	5. 15. 34. 42	5. 22. 23. 22	5. 10. 35	5. 6. 2	
27	Tu.	5. 29. 8. 59	6. 5. 51. 29	4. 57. 13	4. 44. 23	
28	W.	6. 12. 30. 40	6. 19. 6. 25	4. 27. 46	4. 7. 47	
29	Th.	6. 25. 38. 32	7. 2. 6. 52	3. 44. 33	3. 18. 43	
30	F.	7. 8. 31. 42	7. 14. 52. 41	2. 50. 31	2. 20. 28	

[42]		A P R I L 1779.				VI.	
Days of the Month.	Days of the Week.	D's Age.	D's Pats- age over Merid.	D's Right Ascen. at Noon.	D's Right Asc. at Midn.	D's De- clin. at Noon.	D's De- clin. at Midn.
			H. M.	D. M.	D. M.	D. M.	D. M.
1	Th.	16	12. 49	197. 6	203. 9	2. 43 S	5. 32 S
2	F.	17	13. 36	209. 10	215. 12	8. 16	10. 52
3	Sa.	18	14. 22	221. 16	227. 23	13. 19	15. 36
4	Su.	19	15. 10	233. 33	239. 47	17. 41	19. 33
5	M.	20	15. 59	246. 6	252. 28	21. 12	22. 35
6	Tu.	21	16. 49	258. 55	265. 24	23. 43	24. 33
7	W.	22	17. 39	271. 57	278. 30	25. 8	25. 24
8	Th.	23	18. 29	285. 3	291. 35	25. 24	25. 5
9	F.	24	19. 19	298. 5	304. 32	24. 30	23. 38
10	Sa.	25	20. 7	310. 55	317. 14	22. 30	21. 7
11	Su.	26	20. 54	323. 28	329. 37	19. 28	17. 36
12	M.	27	21. 40	335. 43	341. 46	15. 32	13. 15
13	Tu.	28	22. 26	347. 46	353. 45	10. 49	8. 14
14	W.	29	23. 12	359. 43	5. 42	5. 31 S	2. 42 S
15	Th.	30	23. 59	11. 47	17. 55	0. 10 N	3. 5 N
16	F.	1	♂	24. 9	30. 31	6. 0	8. 52
17	Sa.	2	0. 49	37. 3	43. 45	11. 39	14. 19
18	Sa.	3	1. 42	50. 40	57. 47	16. 48	19. 3
19	M.	4	2. 38	65. 7	72. 38	21. 2	22. 42
20	Tu.	5	3. 38	80. 20	88. 9	24. 0	24. 55
21	W.	6	4. 40	96. 3	103. 58	25. 26	25. 31
22	Th.	7	5. 41	111. 50	119. 37	25. 10	24. 26
23	F.	8	6. 40	127. 14	134. 40	23. 17	21. 48
24	Sa.	9	7. 36	141. 54	148. 55	19. 59	17. 54
25	Su.	10	8. 29	155. 44	162. 20	15. 36	13. 6
26	M.	11	9. 18	168. 46	175. 3	10. 28	7. 42
27	Tu.	12	10. 5	181. 13	187. 16	4. 53 N	2. 1 N
28	W.	13	10. 50	193. 15	199. 12	0. 50 S	3. 40 S
29	Th.	14	11. 36	205. 8	211. 5	6. 26	9. 7
30	F.	15	12. 21	217. 4	223. 7	11. 40	13. 59



VII.

A P R I L 1779.

[43]

Days of the Month.	Days of the Week.	Semidr. $\Delta$ at Noon.	Semidr. $\Delta$ at Midnight.	Hor. Par. $\Delta$ at Noon.	Hor. Par. $\Delta$ at Midnight.	Propor. Log. at Noon.	Propor. Log. at Midnight.
		M. S.	M. S.	M. S.	M. S.		
1	Th.	15. 40	15. 35	57. 30	57. 11	4956	4980
2	F.	15. 30	15. 24	56. 52	56. 32	5004	5029
3	Sa.	15. 19	15. 14	56. 13	55. 55	5054	5077
4	Su.	15. 9	15. 5	55. 37	55. 21	5100	5122
5	M.	14. 1	14. 57	55. 6	54. 54	5141	5157
6	Tu.	14. 54	14. 52	54. 43	54. 34	5171	5183
7	W.	14. 50	14. 49	54. 28	54. 24	5191	5197
8	Th.	14. 49	14. 50	54. 23	54. 25	5198	5195
9	F.	14. 51	14. 52	54. 29	54. 35	5190	5182
10	Sa.	14. 55	14. 58	54. 44	54. 55	5170	5155
11	Su.	15. 2	15. 6	55. 9	55. 25	5137	5116
12	M.	15. 11	15. 16	55. 43	56. 1	5093	5069
13	Tu.	15. 22	15. 27	56. 22	56. 42	5043	5017
14	W.	15. 33	15. 39	57. 4	57. 26	4989	4961
15	Th.	15. 45	15. 50	57. 48	58. 8	4933	4908
16	F.	15. 56	16. 0	58. 27	58. 45	4885	4863
17	Sa.	16. 5	16. 8	59. 0	59. 14	4844	4827
18	Su.	16. 11	16. 14	59. 25	59. 34	4813	4802
19	M.	16. 15	16. 17	59. 40	59. 44	4794	4790
20	Tu.	16. 17	16. 17	59. 45	59. 45	4789	4789
21	W.	16. 16	16. 15	59. 42	59. 38	4794	4798
22	Th.	16. 13	16. 11	59. 32	59. 25	4806	4813
23	F.	16. 9	16. 7	59. 16	59. 7	4824	4834
24	Sa.	16. 4	16. 1	58. 57	58. 46	4848	4861
25	Su.	15. 58	15. 55	58. 35	58. 23	4875	4890
26	M.	15. 51	15. 47	58. 10	57. 57	4906	4922
27	Tu.	15. 43	15. 40	57. 42	57. 28	4940	4958
28	W.	15. 35	15. 32	57. 13	56. 59	4977	4995
29	Th.	15. 27	15. 23	56. 43	56. 27	5015	5035
30	F.	15. 19	15. 15	56. 12	55. 57	5055	5075

[44] APRIL 1779. VIII.

Distances of  $\gamma$ 's Center from  $\odot$ , and from Stars east of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Antares.	50. 35. 36	48. 56. 8	47. 16. 59	45. 38. 9
2		37. 28. 53	35. 52. 4	34. 15. 38	32. 39. 36
3		24. 45. 51			
3	Aquilæ.	76. 18. 42	74. 59. 33	73. 40. 52	72. 22. 41
4		65. 59. 37	64. 44. 44	63. 30. 30	62. 16. 57
5		56. 20. 7			
5	Fomal- haut.	83. 34. 43	82. 6. 51	80. 39. 14	79. 11. 51
6		71. 58. 18	70. 32. 13	69. 6. 21	67. 40. 43
7		60. 35. 39	59. 11. 15	57. 47. 3	56. 23. 5
8		49. 26. 42	48. 4. 9	46. 41. 54	45. 19. 58
9		38. 35. 38			
6	The Sun.	116. 39. 37	115. 17. 16	113. 55. 3	112. 32. 58
7		105. 44. 16	104. 22. 47	103. 1. 22	101. 40. 0
8		94. 53. 50	93. 32. 38	92. 11. 26	90. 50. 12
9		84. 3. 31	82. 41. 58	81. 20. 20	79. 58. 36
10		73. 8. 14	71. 45. 43	70. 23. 2	69. 0. 12
11	Aldeba- ran.	62. 3. 11	60. 39. 9	59. 14. 54	57. 50. 24
12		50. 44. 13	49. 18. 12	47. 51. 54	46. 25. 20
16		42. 1. 4	40. 18. 17	38. 35. 20	36. 52. 12
17	Pollux.	28. 14. 37			
17		72. 10. 21	70. 24. 59	68. 39. 26	66. 53. 42
18		58. 2. 36	56. 15. 58	54. 29. 14	52. 42. 25
19		43. 47. 12	42. 0. 1	40. 12. 52	38. 25. 42
20	Regulus.	29. 30. 22			
20		65. 35. 11	63. 47. 53	62. 0. 38	60. 13. 27
21		51. 18. 29	49. 31. 44	47. 45. 6	45. 58. 34
22		37. 8. 2	35. 22. 23	33. 36. 57	31. 51. 46
23		23. 9. 50			
23	Spica $\alpha$ .	77. 5. 39	75. 20. 38	73. 35. 40	71. 51. 3
24		63. 9. 46	61. 25. 59	59. 42. 23	57. 58. 57
25		49. 24. 36	47. 42. 18	46. 0. 14	44. 18. 23
26		35. 52. 54	34. 12. 35	32. 32. 38	30. 53. 4
27		22. 41. 51			
27	Antares.	68. 7. 7	66. 26. 59	64. 47. 2	63. 7. 17
28		54. 51. 33	53. 13. 2	51. 34. 45	49. 56. 41
29		41. 49. 55	40. 13. 19	38. 37. 0	37. 0. 58
30		29. 5. 4	27. 30. 51	25. 57. 4	24. 23. 45
M. 11		16. 45. 21			



Distances of  $\beta$ 's Center from  $\odot$ , and from Stars east of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Antares.	43. 59. 38	42. 21. 26	40. 43. 34	39. 6. 3
2		31. 3. 58	29. 28. 46	27. 54. 0	26. 19. 41
3	$\alpha$ Aquila.	71. 4. 59	69. 47. 47	68. 31. 10	67. 15. 6
4		61. 4. 4	59. 51. 55	58. 40. 32	57. 29. 55
5	Fomal- haut.	77. 44. 42	76. 17. 46	74. 51. 4	73. 24. 34
6		66. 15. 16	64. 50. 3	63. 25. 2	62. 0. 14
7		54. 59. 20	53. 35. 48	52. 12. 31	50. 49. 29
8		43. 58. 20	42. 37. 4	41. 16. 11	39. 55. 42
6	The Sun.	111. 11. 1	109. 49. 12	108. 27. 27	107. 5. 49
7		100. 18. 42	98. 57. 27	97. 36. 13	96. 15. 1
8		89. 28. 58	88. 7. 41	86. 46. 21	85. 24. 58
9		78. 36. 46	77. 14. 50	75. 52. 46	74. 30. 34
10		67. 37. 11	66. 13. 59	64. 50. 35	63. 26. 59
11		56. 25. 41	55. 0. 42	53. 35. 28	52. 9. 58
12		44. 58. 23			
15	Aldeba- ran.	48. 49. 55	47. 8. 4	45. 25. 59	43. 43. 39
16		35. 8. 55	33. 25. 30	31. 41. 59	29. 58. 22
17	Pollux.	65. 7. 47	63. 21. 42	61. 35. 28	59. 49. 7
18		50. 55. 30	49. 8. 30	47. 21. 27	45. 34. 21
19		36. 38. 32	34. 51. 25	33. 4. 20	31. 17. 19
20	Regulus.	58. 26. 18	56. 39. 14	54. 52. 14	53. 5. 19
21		44. 12. 10	42. 25. 54	40. 39. 47	38. 53. 50
22		30. 6. 47	28. 22. 5	26. 37. 41	24. 53. 35
23	Spica $\mu$	70. 6. 29	68. 22. 4	66. 37. 48	64. 53. 42
24		56. 15. 42	54. 32. 38	52. 49. 46	51. 7. 5
25		42. 36. 46	40. 55. 23	39. 14. 17	37. 33. 27
26		29. 13. 52	27. 35. 5	25. 56. 48	24. 19. 3
27	Antares.	61. 27. 43	59. 48. 22	58. 9. 13	56. 30. 17
28		48. 18. 51	46. 41. 14	45. 3. 53	43. 26. 46
29		35. 25. 14	33. 49. 41	32. 14. 28	30. 39. 36
30		22. 50. 54	21. 18. 37	19. 46. 54	18. 15. 48

Distances of  $\gamma$ 's Center from  $\odot$ , and from Stars west of her.

Days.	Stars Names.	Noon. D. M. S.	3 Hours. D. M. S.	6 Hours. D. M. S.	9 Hours. D. M. S.
1		50. 7. 39	51. 47. 18	53. 26. 41	55. 5. 50
2	Regulus.	63. 17. 35	64. 55. 7	66. 32. 21	68. 9. 19
3		76. 9. 51			
3		22. 37. 55	24. 10. 9	25. 42. 22	27. 14. 37
4		34. 55. 25	36. 27. 16	37. 58. 56	39. 30. 28
5	Spica $\alpha$	47. 5. 42	48. 36. 15	50. 6. 39	51. 36. 53
6		59. 5. 39	60. 34. 59	62. 4. 13	63. 33. 19
7		70. 57. 11	72. 25. 43	73. 54. 11	75. 22. 37
8		36. 52. 25	38. 20. 15	39. 48. 9	41. 16. 8
9		48. 37. 11	50. 5. 41	51. 34. 18	53. 3. 3
10		60. 28. 45	61. 58. 22	63. 28. 10	64. 58. 10
11	Antares.	72. 31. 3	74. 2. 17	75. 33. 46	77. 5. 30
12		84. 48. 1	86. 21. 20	87. 54. 57	89. 28. 51
13		97. 22. 53	98. 58. 37	100. 34. 40	102. 11. 2
14		110. 17. 41			
14	Aquila.	66. 0. 24	67. 19. 59	68. 40. 12	70. 1. 2
15		76. 54. 4	78. 18. 15	79. 42. 49	81. 7. 49
16	Fomal- haut.	55. 1. 4	56. 38. 46	58. 16. 56	59. 55. 33
17		68. 14. 38			
20		50. 57. 40	52. 37. 45	54. 17. 49	55. 57. 52
21		64. 17. 33	65. 57. 20	67. 37. 4	69. 16. 43
22	The Sun.	77. 33. 41	79. 12. 48	80. 51. 48	82. 30. 42
23		90. 43. 26	92. 21. 37	93. 59. 41	95. 37. 37
24		103. 45. 12	105. 22. 18	106. 59. 15	108. 36. 3
25		116. 37. 43			
23		13. 52. 19	15. 35. 10	17. 18. 14	19. 1. 30
24	Pollux.	27. 39. 53	29. 23. 35	31. 7. 12	32. 50. 45
25		41. 27. 4	43. 9. 58	44. 52. 44	46. 35. 22
26		55. 6. 20			
26		19. 22. 21	21. 1. 45	22. 41. 14	24. 20. 49
27		32. 39. 15	34. 18. 47	35. 58. 14	37. 37. 34
28	Regulus.	45. 52. 16	47. 30. 45	49. 9. 5	50. 47. 14
29		58. 55. 16	60. 32. 16	62. 9. 5	63. 45. 42
30		71. 46. 2			
30	Spica $\alpha$	18. 24. 56	19. 55. 56	21. 27. 8	22. 58. 31
M. 1		30. 38. 21			



XI.

A P R I L 1779.

[47]

Distances of  $\gamma$ 's Center from  $\odot$ , and from Stars west of her.

Days	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	L. M. S.	D. M. S.
1	Regulus.	56. 44. 43	58. 23. 20	60. 1. 41	61. 39. 45
2		69. 45. 59	71. 22. 23	72. 58. 30	74. 34. 19
3	Spica $\pi$	28. 46. 54	30. 19. 9	31. 51. 19	33. 23. 25
4		41. 1. 52	42. 33. 4	44. 4. 6	45. 34. 59
5		53. 6. 57	54. 36. 51	56. 6. 35	57. 36. 11
6		65. 2. 18	66. 31. 9	67. 59. 55	69. 28. 35
7		76. 51. 0			
7		31. 1. 40	32. 29. 16	33. 56. 56	35. 24. 39
8		42. 44. 10	44. 12. 17	45. 40. 29	47. 8. 48
9		54. 31. 54	56. 0. 53	57. 30. 1	58. 59. 19
10		66. 28. 20	67. 58. 42	69. 29. 16	71. 0. 2
11		78. 37. 28	80. 9. 42	81. 42. 12	83. 14. 59
12	Antares.	91. 3. 2	92. 37. 32	94. 12. 20	95. 47. 28
13		103. 47. 44	105. 24. 44	107. 2. 4	108. 39. 43
14	$\alpha$ Aquila.	71. 22. 32	72. 44. 37	74. 7. 14	75. 30. 28
15		82. 33. 14			
15	Fomal- haut.	48. 35. 38	50. 11. 10	51. 47. 14	53. 23. 51
16		61. 34. 37	63. 14. 6	64. 53. 55	66. 34. 6
19	The Sun.	44. 17. 31	45. 57. 31	47. 37. 32	49. 17. 35
20		57. 37. 54	59. 17. 53	60. 57. 49	62. 37. 42
21		50. 56. 18	72. 35. 47	74. 15. 10	75. 54. 28
22		84. 9. 30	85. 48. 9	87. 26. 42	89. 5. 7
23		97. 15. 26	98. 53. 5	100. 30. 56	102. 7. 58
24		110. 12. 42	111. 40. 11	113. 25. 32	115. 1. 42
23	Pollux.	20. 45. 0	22. 28. 39	24. 12. 20	25. 56. 5
24		34. 34. 15	36. 17. 37	38. 0. 53	39. 44. 2
25		48. 17. 52	50. 0. 13	51. 42. 25	53. 24. 27
26	Regulus.	26. 0. 30	27. 40. 13	29. 19. 55	30. 59. 35
27		39. 16. 48	40. 55. 53	42. 34. 49	44. 13. 37
28		52. 25. 13	54. 3. 1	55. 40. 37	57. 18. 2
29		65. 22. 8	66. 58. 22	68. 34. 26	70. 10. 19
30	Spica $\pi$	24. 30. 6	26. 1. 53	27. 33. 50	29. 6. 0

[48]

APRIL 1779.

XII.

Configurations of the SATELLITES of JUPITER  
at 9 o' Clock in the Evening.

1	0.1			⊙		2	4	3	
2				⊙	1			4	
3			2	1	⊙				3. 0.4
4	0.2		3		⊙	2			
5		3		1	⊙		2		4
6			3	2	⊙	1		4	
7			2	1	⊙	3			
8					⊙	4	2	3	1. 0
9				4	⊙	2		3	
10		4	2	1	⊙	3			
11		4	3		2	⊙	1		
12	2		3		1	⊙		2	
13	4		3		2	⊙	1		
14		4		2	2	⊙	3		
15			4			⊙	1	2	3
16				4		⊙			0.1
17			2	1		⊙	4		
18			3	2		⊙	1		4
19		3		1		⊙		2	4
20	2. 0		3			⊙	1		4
21			2	1		⊙	3		
22						⊙	1	2	3
23					1	⊙			4
24	1. 0		2			⊙	3	4	
25	4. 0		3	2		⊙	1		
26		3	4	1		⊙		2	
27		4		3		⊙	2	1	
28	0.3		2	1		⊙			
29	4					⊙	2		3
30	4				1	⊙		2	3

Days of the Month.	Days of the Week.	Sundays, Holidays, &c.	Phases of the Moon.
			D.H.M.
1	Sa.	<i>St. Philip and St. James.</i>	Last Quarter — 8. 5. 10 New Moon — 15. 13. 6 First Quarter — 22. 4. 36 Full Moon — 29. 16. 52
2	Su.	<i>4th Sunday after Easter.</i>	D. Other Phenomena. 1. ☾ 4 ad ☿ = 1 <sup>h</sup> . 31'. ☾ 5 6 <sup>h</sup> . 42'. ☾ 6 7 <sup>h</sup> . 27'. ☾ 7 17 <sup>h</sup> . 17'. 2. ☿ x = diff. Lat. 9'. 3. ☾ B Ophiuchi 6 <sup>h</sup> . 59'. 4. ☾ λ ♄ 11 <sup>h</sup> . 3'. ☾ σ ♄ 23 <sup>h</sup> . 18'. 8. ☾ ε ♄ 3 <sup>h</sup> . 40'. 10. ☾ 2 ad ♄ = 7 <sup>h</sup> . 24'. ☾ 3 ad ♄ = 7 <sup>h</sup> . 31'. 11. ☾ 33 ♄ 6 <sup>h</sup> . 18'. 13. ♄ Stationary. 15. ☉ eclipsed, invisible. 16. ☾ 1 ♂ 19 <sup>h</sup> . 55'. 18. ☾ ε ♀ 9 <sup>h</sup> . 37'. 19. ☾ κ ♀ 8 <sup>h</sup> . 7'. 20. ☾ γ ♄ 7 <sup>h</sup> . 5'. ☉ enters ♀ at 19 <sup>h</sup> . 19'. 21. ☾ η ♄ 17 <sup>h</sup> . 27'. 23. ☾ ι ♄ 3 <sup>h</sup> . 30'. 24. ☾ c ♄ 7 <sup>h</sup> . 40'. 26. ♄ Stationary. ☾ κ ♄ 17 <sup>h</sup> . 6'. 28. ☾ 4 ad ☿ = 8 <sup>h</sup> . 24'. 29. ☾ β ♄ 0 <sup>h</sup> . 18'. ☾ eclipsed, partly visible. 30. ☾ B Ophiuchi 14 <sup>h</sup> . 10'. 31. ☾ λ ♄ 18 <sup>h</sup> . 14'.
3	M.	<i>Inv. of the Crofs. From</i>	
4	Tu.	<i>[Easter in 1 m. 3 ret.]</i>	
5	W.		
6	Th.	<i>John Ev. ante Port. Lat.</i>	
7	F.		
8	Sa.		
9	Su.	<i>5th Su. after East. Rog. Su.</i>	
10	M.	<i>From East. in 5 w. 4 ret.</i>	
11	Tu.		
12	W.		
13	Th.	<i>Ascension-day. H. Thurs</i>	
14	F.	<i>On mor. of Ascen. 5 ret.</i>	
15	Sa.		
16	Su.	<i>Sunday after Ascension-day.</i>	
17	M.	<i>Easter Term ends.</i>	
18	Tu.		
19	W.	<i>2. Char. b. 1744. Dunst.</i>	
20	Th.	<i>Oxford Term ends.</i>	
21	F.		
22	Sa.	<i>Prs. Elizabeth born.</i>	
23	Su.	<i>Whit-Sunday.</i>	
24	M.		
25	Tu.		
26	W.	<i>August. 1st Abp. of Cant.</i>	
27	Th.	<i>Venerable Bede.</i>	
28	F.		
29	Sa.	<i>K. Char. II. Restoration.</i>	
30	Su.	<i>Trinity-Sunday. Camb.</i>	
31	M.	<i>[Ter. div. m.]</i>	







# III. MAY 1779. [51]

Days	Semidia- meter of the Sun	Time of D <sup>o</sup> passing the Meridian.	Hourly Motion of the Sun.	Logarithm of the Sun's Dilance.	Place of the Moon's Node.
	M. S.	M. S.	M. S.		S. D. M.
1	15. 54. 6	1. 5. 9	2. 25. 3	0,003707	2. 13. 1
7	15. 53. 2	1. 6. 4	2. 24. 9	0,004336	2. 12. 42
13	15. 52. 0	1. 6. 9	2. 24. 6	0,004922	2. 12. 23
19	15. 50. 8	1. 7. 4	2. 24. 2	0,005434	2. 12. 4
25	15. 49. 8	1. 7. 8	2. 23. 9	0,005872	2. 11. 45

## ECLIPSES of the SATELLITES of JUPITER.

I. Satellite. Emerfions.		II. Satellite. Emerfions.		III. Satellite.	
Days	H. M. S.	Days	H. M. S.	Days.	H. M. S.
1	11* 45. 48	1	3. 15. 15	2	2. 54. 27 I
3	6. 14. 37	4	16. 33. 45	2	5. 44. 27 E
5	0. 43. 29	8	5. 52. 13	9	6. 54. 27 I
6	19. 12. 14	11	19. 10. 37	9	9* 43. 35 E
8	13* 41. 1	15	8. 28. 56	16	10* 53. 52 I
10	8. 9. 48	18	21. 47. 11	16	13. 41. 57 E
12	2. 38. 29	22	11* 5. 19	23	14. 52. 47 I
13	21. 7. 12	26	0. 23. 23	23	17. 39. 50 E
15	15. 35. 50	29	13. 41. 24	30	18. 51. 15 I
17	10* 4. 27			30	21. 37. 16 E
19	4. 33. 1			IV. Satellite.	
20	23. 1. 37			12	9* 25. 29 I
22	17. 30. 8			12	12* 22. 9 E
24	11* 58. 38			29	3. 25. 55 I
26	6. 27. 6			29	6. 14. 31 E
28	0. 55. 35				
29	19. 23. 59				
31	13. 52. 27				

Days	Heliocen- tric Lon- gitude.	Heliocen- tric Lat- tude.	Geocen- tric Lon- gitude.	Geocen- tric La- titude.	Declina- tion.	Passage over Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.

M E R C U R Y. Inf.  $\odot$  12<sup>d</sup>. 12<sup>h</sup>.

1	6. 16. 32	3. 26 N	1. 26. 7	2. 11 N	21. 26 N	0. 59
4	6. 26. 31	2. 20	1. 25. 51	1. 40	20. 52	0. 47
7	7. 5. 53	1. 13	1. 24. 54	0. 56	19. 55	0. 32
10	7. 14. 49	0. 8 N	1. 23. 26	0. 6 N	18. 45	0. 15
13	7. 23. 25	0. 55 S	1. 21. 43	0. 46 S	17. 29	23. 52
16	8. 1. 48	1. 55	1. 20. 0	1. 37	16. 12	23. 34
19	8. 10. 3	2. 52	1. 18. 33	2. 22	15. 5	23. 18
22	8. 18. 17	3. 45	1. 17. 35	3. 0	14. 14	23. 3
25	8. 26. 35	4. 34	1. 17. 12	3. 28	13. 40	22. 50
28	9. 5. 3	5. 18	1. 17. 30	3. 44	13. 29	22. 41
31	9. 13. 45	5. 55	1. 18. 27	3. 52	13. 38	22. 34

V E N U S.

1	9. 20. 33	1. 59 S	11. 28. 49	1. 25 S	1. 47 S	21. 24
7	10. 0. 2	2. 25	0. 5. 40	1. 40	0. 44 N	21. 27
13	10. 9. 31	2. 46	0. 12. 35	1. 50	3. 18	21. 29
19	10. 19. 0	3. 3	0. 19. 34	1. 56	5. 53	21. 31
25	10. 28. 30	3. 15	0. 26. 33	2. 0	8. 24	21. 33

M A R S.  $\odot$  11<sup>d</sup>. 23<sup>h</sup>.  $\frac{1}{2}$ .

1	7. 15. 56	0. 4 N	7. 25. 8	0. 13 N	18. 52 S	12. 55
7	7. 18. 58	0. 1 S	7. 23. 10	0. 3 S	18. 40	12. 24
13	7. 22. 2	0. 7	7. 21. 9	0. 21	18. 25	11. 52
19	7. 25. 8	0. 13	7. 19. 6	0. 39	18. 8	11. 19
25	7. 28. 16	0. 19	7. 17. 0	0. 56	17. 50	10. 47

J U P I T E R.

1	5. 26. 11	1. 17 N	5. 17. 38	1. 28 N	6. 15 N	8. 41
7	5. 26. 38	1. 17	5. 17. 26	1. 27	6. 18	8. 18
13	5. 27. 5	1. 17	5. 17. 23	1. 25	6. 19	7. 54
19	5. 27. 32	1. 18	5. 17. 26	1. 24	6. 16	7. 30
25	5. 28. 0	1. 18	5. 17. 34	1. 23	6. 11	7. 7

S A T U R N.  $\odot$  14<sup>d</sup>. 6<sup>h</sup>.

1	7. 23. 17	2. 8 N	7. 24. 40	2. 23 N	16. 39 S	12. 55
7	7. 23. 28	2. 7	7. 24. 14	2. 22	16. 33	12. 31
13	7. 23. 39	2. 7	7. 23. 47	2. 21	16. 27	12. 6
19	7. 23. 50	2. 7	7. 23. 20	2. 21	16. 21	11. 40
25	7. 24. 1	2. 7	7. 22. 53	2. 21	16. 15	11. 14

V. M A Y 1779. [53]

Days of the Month.	Days of the Week.	Moon's Longitude at Noon.	Moon's Longitude at Midnight.	Moon's Latitude at Noon.	Moon's Latitude at Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
1	Sa.	7. 21. 10. 1	7. 27. 23. 44	1. 48. 57 N	1. 16. 24 N
2	Sa.	8. 3. 34. 1	8. 9. 41. 3	0. 43. 11 N	0. 9. 44 N
3	M.	8. 15. 45. 8	8. 21. 46. 36	0. 23. 35 S	0. 56. 25 S
4	Tu.	8. 27. 45. 46	9. 3. 43. 6	1. 28. 27	1. 59. 24
5	W.	9. 9. 39. 2	9. 15. 34. 7	2. 28. 53	2. 56. 45
6	Th.	9. 21. 28. 50	9. 27. 23. 51	3. 22. 42	3. 45. 29
7	F.	10. 3. 19. 40	10. 9. 16. 54	4. 7. 56	4. 26. 47
8	Sa.	10. 15. 16. 15	10. 21. 18. 12	4. 42. 51	4. 55. 54
9	Sa.	10. 27. 23. 24	11. 3. 32. 29	5. 5. 46	5. 12. 12
10	M.	11. 9. 45. 50	11. 16. 4. 5	5. 15. 8	5. 14. 15
11	Tu.	11. 22. 27. 30	11. 28. 56. 34	5. 9. 35	5. 0. 54
12	W.	0. 5. 31. 28	0. 12. 12. 21	4. 48. 9	4. 31. 18
13	Th.	0. 18. 59. 18	0. 25. 52. 14	4. 10. 26	3. 45. 35
14	F.	1. 2. 50. 50	1. 9. 54. 45	3. 17. 5	2. 45. 12
15	Sa.	1. 17. 3. 32	1. 24. 16. 33	2. 10. 20	1. 33. 3
16	Sa.	2. 1. 33. 4	2. 8. 52. 17	0. 53. 55 S	0. 13. 39 S
17	M.	2. 16. 13. 19	2. 23. 35. 24	0. 27. 2 N	1. 7. 23 N
18	Tu.	3. 0. 57. 33	3. 8. 19. 0	1. 46. 38	2. 24. 2
19	W.	3. 15. 39. 8	3. 22. 57. 8	2. 58. 58	3. 30. 47
20	Th.	4. 0. 12. 30	4. 7. 24. 44	3. 59. 1	4. 23. 14
21	F.	4. 14. 33. 30	4. 21. 38. 26	4. 43. 11	4. 58. 36
22	Sa.	4. 28. 39. 26	5. 5. 36. 15	5. 9. 24	5. 15. 33
23	Sa.	5. 12. 28. 55	5. 19. 17. 19	5. 17. 8	5. 14. 9
24	M.	5. 26. 1. 34	6. 2. 41. 38	5. 6. 55	4. 55. 34
25	Tu.	6. 9. 17. 40	6. 15. 49. 47	4. 40. 26	4. 21. 46
26	W.	6. 22. 18. 7	6. 28. 42. 48	3. 59. 55	3. 35. 15
27	Th.	7. 5. 4. 2	7. 11. 21. 57	3. 8. 6	2. 38. 54
28	F.	7. 17. 36. 45	7. 23. 48. 36	2. 8. 0	1. 35. 50
29	Sa.	7. 29. 57. 41	8. 6. 4. 13	1. 2. 47 N	0. 29. 12 N
30	Sa.	8. 12. 8. 23	8. 18. 10. 21	0. 4. 29 S	0. 37. 56 S
31	M.	8. 24. 10. 25	9. 0. 8. 56	1. 10. 46	1. 42. 41



[54]

M A Y 1779.

VI.

Days of the Month.	Days of the Week.	D's Age.	D's Pass- age over Merid.	D's Right Ascen. at Noon.	D's Right Asc. at Midn.	D's De- clin. at Noon.	D's De- clin. at Midn.
			H. M.	D. M.	D. M.	D. M.	D. M.
1	Sa.	16	13. 10	229. 14	235. 25	16. 19 S	18. 22 S
2	Su.	17	13. 57	241. 42	248. 3	20. 11	21. 46
3	M.	18	14. 47	254. 29	260. 59	23. 6	24. 9
4	Tu.	19	15. 37	267. 32	274. 7	24. 55	25. 24
5	W.	20	16. 26	280. 42	287. 16	25. 35	25. 29
6	Th.	21	17. 16	293. 48	300. 16	25. 5	24. 25
7	F.	22	18. 5	306. 41	313. 0	23. 27	22. 14
8	Sa.	23	18. 52	319. 13	325. 22	20. 46	19. 5
9	Su.	24	19. 37	331. 25	337. 24	17. 10	15. 4
10	M.	25	20. 21	343. 21	349. 15	12. 46	10. 19
11	Tu.	26	21. 7	355. 8	1. 2	7. 44	5. 1 S
12	W.	27	21. 53	6. 58	12. 59	2. 13 S	0. 40 N
13	Th.	28	22. 41	19. 6	25. 21	3. 35 N	6. 30
14	F.	29	23. 33	31. 46	38. 23	9. 23	12. 11
15	Sa.	1	0	45. 13	52. 18	14. 52	17. 22
16	Su.	2	0. 27	59. 38	67. 12	19. 37	21. 35
17	M.	3	1. 28	74. 59	82. 57	23. 12	24. 26
18	Tu.	4	2. 31	91. 4	99. 13	25. 14	25. 36
19	W.	5	3. 35	107. 22	115. 26	25. 31	24. 59
20	Th.	6	4. 36	123. 20	131. 2	24. 1	22. 41
21	F.	7	5. 34	138. 30	145. 43	21. 0	19. 1
22	Sa.	8	6. 28	152. 41	159. 24	16. 47	14. 21
23	Su.	9	7. 18	165. 55	172. 14	11. 46	9. 3
24	M.	10	8. 5	178. 24	184. 26	6. 16	3. 27 N
25	Tu.	11	8. 49	190. 23	196. 15	0. 37 N	2. 12 S
26	W.	12	9. 34	202. 7	207. 58	4. 59 S	7. 40
27	Th.	13	10. 19	213. 51	219. 47	10. 16	12. 45
28	F.	14	11. 4	225. 46	231. 50	15. 3	17. 12
29	Sa.	15	11. 50	238. 0	244. 16	19. 8	20. 52
30	Su.	16	12. 39	250. 38	257. 5	22. 21	23. 34
31	M.	17	13. 29	263. 36	270. 10	24. 31	25. 11



VII. MAY 1779. [55]

Days of the Month.	Days of the Week.	Semid. $\bar{D}$ at Noon. M. S.	Semid. $\bar{D}$ at Mid-night. M. S.	Hor. Par. $\bar{D}$ at Noon. M. S.	Hor. Par. $\bar{D}$ at Midnight. M. S.	Propor. Lo- gar. at Noon.	Propor. Lo- gar. at Midn.
1	Sa.	15. 11	15. 7	55. 43	55. 27	5093	5114
2	Su.	15. 3	15. 0	55. 14	55. 3	5130	5145
3	M.	14. 57	14. 54	54. 51	54. 41	5161	5174
4	Tu.	14. 52	14. 50	54. 33	54. 26	5185	5194
5	W.	14. 48	14. 48	54. 22	54. 19	5199	5203
6	Th.	14. 48	14. 49	54. 20	54. 22	5202	5199
7	F.	14. 50	14. 52	54. 27	54. 35	5193	5182
8	Sa.	14. 55	14. 58	54. 44	54. 57	5170	5153
9	Su.	15. 2	15. 7	55. 11	55. 28	5134	5112
10	M.	15. 12	15. 18	55. 48	56. 8	5086	5060
11	Tu.	15. 24	15. 31	56. 32	56. 56	5029	4999
12	W.	15. 38	15. 45	57. 22	57. 47	4966	4934
13	Th.	15. 52	15. 59	58. 13	58. 38	4902	4871
14	F.	16. 5	16. 11	59. 2	59. 24	4842	4815
15	Sa.	16. 17	16. 21	59. 44	60. 1	4790	4770
16	Su.	16. 25	16. 28	60. 15	60. 25	4753	4741
17	M.	16. 30	16. 31	60. 32	60. 35	4733	4729
18	Tu.	16. 30	16. 29	60. 34	60. 30	4730	4735
19	W.	16. 27	16. 24	60. 23	60. 13	4743	4755
20	Th.	16. 21	16. 17	60. 1	59. 46	4770	4788
21	F.	16. 13	16. 8	59. 30	59. 13	4808	4828
22	Sa.	16. 3	15. 58	58. 55	58. 37	4850	4872
23	Su.	15. 53	15. 48	58. 19	58. 1	4895	4917
24	M.	15. 43	15. 39	57. 42	57. 25	4941	4962
25	Tu.	15. 34	15. 29	57. 7	56. 50	4985	5006
26	W.	15. 25	15. 20	56. 33	56. 18	5028	5048
27	Th.	15. 16	15. 12	56. 2	55. 48	5068	5086
28	F.	15. 8	15. 5	55. 34	55. 21	5104	5122
29	Sa.	15. 2	14. 59	55. 10	54. 59	5136	5150
30	Su.	14. 56	14. 54	54. 48	54. 40	5165	5175
31	M.	14. 51	14. 49	54. 31	54. 24	5187	5197

Distances of J's Center from ☉, and from Stars east of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	α Aquilæ.	69. 33. 43	68. 17. 25	67. 1. 40	65. 46. 27
2		59. 39. 31	58. 28. 13	57. 17. 43	56. 8. 2
3	Fomal- haut.	75. 52. 34	74. 25. 21	72. 58. 21	71. 31. 33
4		64. 20. 54	62. 55. 25	61. 30. 10	60. 5. 10
5		53. 3. 46	51. 40. 16	50. 17. 4	48. 54. 9
6		42. 4. 38			
6	α Arietis.	103. 27. 49	102. 1. 29	100. 35. 7	99. 8. 43
7		91. 55. 57	90. 29. 13	89. 2. 24	87. 35. 30
8		80. 19. 24			
6	The Sun.	114. 12. 29	112. 51. 3	111. 29. 36	110. 8. 7
7		103. 20. 10	101. 58. 24	100. 36. 34	99. 14. 38
8		92. 23. 11	91. 0. 29	89. 37. 37	88. 14. 34
9		81. 16. 32	79. 52. 15	78. 27. 44	77. 2. 58
10		69. 55. 12	68. 28. 46	67. 2. 0	65. 34. 57
11		58. 14. 47	56. 45. 42	55. 16. 14	53. 46. 25
12		46. 11. 39	44. 39. 33	43. 7. 3	41. 34. 9
17	Regulus.	70. 32. 8	68. 41. 39	66. 51. 6	65. 0. 35
18		55. 48. 13	53. 57. 56	52. 7. 47	50. 17. 45
19		41. 9. 45	39. 20. 43	37. 31. 56	35. 43. 28
20		26. 45. 38			
20	Spica ♏	80. 43. 42	78. 56. 4	77. 8. 39	75. 21. 28
21		66. 29. 24	64. 43. 50	62. 58. 32	61. 13. 31
22		52. 32. 47	50. 49. 33	49. 6. 39	47. 24. 4
23		38. 56. 5	37. 15. 32	35. 35. 23	33. 55. 39
24		25. 43. 38			
24	Antares.	71. 13. 46	69. 34. 9	67. 54. 47	66. 15. 40
25		58. 3. 48	56. 26. 9	54. 48. 44	53. 11. 34
26		45. 9. 20	43. 33. 36	41. 58. 8	40. 22. 55
27		32. 30. 37	30. 57. 0	29. 23. 41	27. 50. 41
28	α Aquilæ.	72. 28. 3	71. 11. 33	69. 55. 29	68. 39. 53
29		62. 29. 23	61. 16. 58	60. 5. 15	58. 54. 12
30		53. 10. 28			
30	Fomal- haut.	79. 21. 20	77. 53. 54	76. 26. 37	74. 59. 31
31		67. 46. 42	66. 20. 40	64. 54. 50	63. 29. 11
J. 1		56. 24. 21			



IX. MAY 1779. [57]

Distances of  $\gamma$ 's Center from  $\odot$ , and from Stars east of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	$\alpha$ Aquilæ.	64. 31. 46	63. 17. 41	62. 4. 17	60. 51. 34
2		54. 59. 9			
3	Fomal- haut.	81. 43. 30	80. 15. 28	78. 47. 37	77. 20. 0
4		70. 4. 59	68. 38. 38	67. 12. 30	65. 46. 35
5		58. 40. 23	57. 15. 51	55. 51. 34	54. 27. 32
6	$\alpha$ Arietis.	47. 31. 33	46. 9. 17	44. 47. 22	43. 25. 49
7		97. 42. 10	96. 15. 46	94. 49. 13	93. 22. 37
8	The Sun.	86. 8. 30	84. 41. 24	83. 14. 11	81. 46. 51
9		119. 38. 19	118. 16. 50	116. 55. 22	115. 33. 55
10		108. 46. 58	107. 25. 3	105. 3. 27	104. 41. 49
11		97. 52. 36	96. 30. 26	95. 8. 9	93. 45. 44
12		86. 51. 22	85. 27. 58	84. 4. 22	82. 40. 33
13	Regulus.	75. 37. 57	74. 12. 41	72. 47. 8	71. 21. 19
14		64. 7. 34	62. 39. 53	61. 11. 51	59. 43. 29
15	Spica $\pi$ .	52. 16. 13	50. 45. 39	49. 14. 42	47. 43. 22
16		42. 0. 52			
17		63. 10. 1	61. 19. 30	59. 29. 2	57. 38. 36
18	Antares.	48. 27. 50	46. 38. 2	44. 48. 25	42. 59. 0
19		33. 55. 13	32. 7. 18	30. 19. 43	28. 32. 29
20	Antares.	73. 34. 32	71. 47. 51	70. 1. 25	68. 15. 16
21		59. 28. 47	57. 44. 20	56. 0. 11	54. 16. 20
22		45. 41. 48	43. 59. 51	42. 18. 14	40. 36. 59
23	$\alpha$ Aquilæ.	32. 16. 19	30. 37. 28	28. 59. 3	27. 21. 6
24		64. 36. 48	62. 58. 11	61. 19. 49	59. 41. 41
25	Antares.	51. 34. 39	49. 57. 58	48. 21. 31	46. 45. 18
26		38. 47. 56	37. 13. 12	35. 38. 44	34. 4. 32
27	$\alpha$ Aquilæ.	26. 18. 0			
28		77. 37. 50	76. 19. 51	75. 2. 13	73. 44. 57
29		67. 24. 44	66. 10. 4	64. 55. 57	63. 42. 23
30	Fomal- haut.	57. 43. 51	56. 34. 15	55. 25. 29	54. 17. 34
31		73. 32. 35	72. 5. 48	70. 39. 14	69. 12. 51
		62. 3. 44	60. 38. 31	59. 13. 33	57. 48. 49



Distances of J's Center from ☉, and from Stars west of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Spica 𐌸	30. 38. 22	32. 10. 30	33. 42. 33	35. 14. 32
2		42. 53. 1	44. 24. 21	45. 55. 33	47. 26. 37
3		54. 59. 48	56. 30. 1	58. 0. 6	59. 30. 4
4		66. 57. 53			
4	Antares.	21. 16. 7	22. 43. 33	24. 11. 3	25. 38. 42
5		32. 57. 55	34. 25. 51	35. 53. 49	37. 21. 47
6		44. 41. 53	46. 9. 58	47. 38. 6	49. 6. 17
7		56. 28. 6	57. 56. 40	59. 25. 21	60. 54. 8
8		68. 19. 55	69. 49. 30	71. 19. 17	72. 49. 13
9		80. 21. 59	81. 53. 2	83. 24. 29	84. 56. 11
10		92. 38. 30	94. 11. 50	95. 45. 29	97. 19. 27
11	α Aquilæ.	62. 2. 21	63. 18. 22	64. 35. 10	65. 52. 43
12		72. 31. 11	73. 52. 50	75. 15. 2	76. 37. 49
13	Fomal- haut.	49. 46. 8	51. 22. 1	52. 58. 34	54. 35. 46
14		62. 50. 31			
19	The Sun.	47. 27. 29	49. 10. 8	50. 52. 37	52. 34. 55
20		61. 3. 31	62. 44. 36	64. 25. 27	66. 6. 5
21		74. 25. 32	76. 4. 39	77. 43. 31	79. 22. 7
22		87. 31. 10	89. 8. 10	90. 44. 54	92. 21. 23
23		100. 19. 46	101. 54. 39	103. 29. 17	105. 3. 39
24		112. 51. 43	114. 24. 35	115. 57. 13	117. 29. 36
22	Pollux.	38. 18. 15	40. 1. 59	41. 45. 30	43. 28. 45
23		52. 1. 27	53. 43. 14	55. 24. 46	57. 6. 4
24		65. 28. 55			
24	Regulus.	29. 35. 33	31. 14. 17	32. 52. 53	34. 31. 21
25		42. 41. 20	44. 18. 49	45. 56. 7	47. 33. 14
26		55. 36. 2	57. 12. 2	58. 47. 50	60. 23. 28
27		68. 18. 56	69. 53. 29	71. 27. 52	73. 2. 4
28	Spica 𐌸	27. 9. 50	28. 40. 52	30. 11. 58	31. 43. 8
29		39. 18. 44	40. 49. 41	42. 20. 34	43. 51. 22
30		51. 24. 4	52. 54. 18	54. 24. 26	55. 54. 29
31		63. 23. 12	64. 52. 40	66. 22. 3	67. 51. 21
J. 1		75. 16. 27			

Distances of  $\gamma$ 's Center from  $\odot$ , and from Stars east of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Spica $\alpha$	36. 46. 26	38. 18. 15	39. 49. 57	41. 21. 32
2		48. 57. 32	50. 28. 18	51. 58. 56	53. 29. 26
3		60. 59. 53	62. 29. 34	63. 59. 8	65. 28. 34
4	Antares.	27. 6. 26	28. 34. 14	30. 2. 4	31. 29. 58
5		38. 49. 47	40. 17. 46	41. 45. 47	43. 13. 49
6		50. 34. 31	52. 2. 48	53. 31. 10	54. 59. 36
7		62. 23. 1	63. 52. 2	65. 21. 11	66. 50. 30
8		74. 19. 20	75. 49. 38	77. 20. 9	78. 50. 53
9		86. 28. 8	88. 0. 18	89. 32. 45	91. 5. 29
10		98. 53. 41	100. 28. 20	102. 3. 16	103. 38. 31
11	$\alpha$ Aquilæ.	67. 11. 3	68. 30. 5	69. 49. 47	71. 10. 9
12		78. 1. 10			
12	Fomal- haut.	43. 30. 3	45. 2. 55	46. 36. 33	48. 10. 57
13		56. 13. 36	57. 52. 2	59. 31. 0	61. 10. 30
18	The Sun.	40. 35. 29	42. 18. 39	44. 1. 44	45. 44. 40
19		54. 17. 3	55. 58. 59	57. 40. 41	59. 22. 12
20		67. 46. 28	69. 26. 37	71. 6. 30	72. 46. 9
21		81. 0. 27	82. 38. 32	84. 16. 21	85. 53. 53
22		93. 57. 35	95. 33. 31	97. 9. 12	98. 44. 37
23		106. 37. 46	108. 11. 38	109. 45. 14	111. 18. 36
24		119. 1. 45	120. 33. 39		
22	Pollux.	45. 11. 47	46. 54. 35	48. 37. 8	50. 19. 25
23		58. 47. 7	60. 27. 56	62. 8. 30	63. 48. 49
24	Regulus.	36. 9. 41	37. 47. 50	39. 25. 50	41. 3. 40
25		49. 10. 10	50. 46. 55	52. 23. 28	53. 59. 51
26		61. 58. 55	63. 34. 11	65. 9. 17	66. 44. 12
27		74. 36. 5			
27	Spica $\alpha$	21. 7. 18	22. 37. 39	24. 8. 12	25. 38. 56
28		33. 14. 20	34. 45. 29	36. 16. 36	37. 47. 41
29		45. 22. 6	46. 52. 44	48. 23. 16	49. 53. 43
30		57. 24. 25	58. 54. 15	60. 24. 0	61. 53. 38
31		69. 20. 35	70. 49. 42	72. 18. 43	73. 47. 38

Configurations of the SATELLITES of JUPITER  
at 10 o' Clock in the Evening.

1	1 <sup>o</sup>	4		2	⊙	3	
2		4	2	⊙	1		
3		3	1	4	⊙	2	
4		3		⊙	2	1	4
5		2	1	3	⊙		4
6				⊙	12	1	3
7			1	⊙		2	3
8			2	⊙	1	3	4
9			2	⊙	1		4
10		3	1	⊙	2	4	
11		3		⊙	1	2	4
12		2	1	4	⊙		
13	2.0	4		⊙	1	3	
14	4		1	⊙	2	3	
15	4		2	⊙	1	3	
16	4		2	⊙			1.0
17	4	3	1	⊙	2		
18		4	3	⊙	1	2	
19			4	⊙	1		
20	4.0		2	⊙	1	2	
21			1	⊙	2	4	3
22	2 <sup>o</sup>			⊙	1	3	4
23	3 <sup>o</sup>		2	1	⊙		4
24	1 <sup>o</sup>	3		⊙	2		4
25		3		⊙	1	2	4
26		2	3	1	⊙		4
27			1	⊙	3	4	
28			1	⊙	4	2	3
29	2 <sup>o</sup>		4	⊙	1	3	
30		4	1	⊙	2		
31	4		3	⊙	1	2	



J U N E 1779.			[61]
Days of the Month.	Days of the Week.	Sundays, Holidays, &c.	Phases of the Moon.
1	Tu.	Nicomede.	D. H. M.
2	W.	Oxf. and Cam. T. begin.	Last Quarter — 6. 20. 42
3	Th.	(begins.	New Moon — 13. 21. 0
4	F.	K. Geo. III. born 1738. Ter.	First Quarter — 20. 11. 39
5	Sa.	Pr. Ern. Aug. born. Bonif.	Full Moon — 28. 7. 46
6	Su.	1 <sup>st</sup> Sunday after Trinity.	Other Phenomena.
7	M.	In 8 days of H. T. 2 ret.	D.
8	Tu.		1. ☾ 2 6 <sup>h</sup> . 29 <sup>l</sup> .
9	W.		4. ☾ 11 <sup>h</sup> . 1 <sup>l</sup> .
10	Th.	Prs. Amelia born.	11. ☾ 10 <sup>h</sup> . 14 <sup>l</sup> .
11	F.	St. Barnabas.	13. ☾ 6 <sup>h</sup> . 3 <sup>l</sup> .
12	Sa.		☉ eclipsed, visible.
13	Su.	2 <sup>d</sup> Sunday after Trinity.	14. ☾ 19 <sup>h</sup> . 2 <sup>l</sup> .
14	M.	In 15 days of H. T. 3 ret.	16. ☾ 15 <sup>h</sup> . 7 <sup>l</sup> .
15	Tu.		18. ☾ 0 <sup>h</sup> . 23 <sup>l</sup> .
16	W.		19. ☾ 9 <sup>h</sup> . 36 <sup>l</sup> .
17	Th.	St. Alban.	20. ☾ 13 <sup>h</sup> . 19 <sup>l</sup> .
18	F.		21. ☉ enters ♋ 4 <sup>h</sup> . 3 <sup>l</sup> .
19	Sa.		22. ☾ 22 <sup>h</sup> . 35 <sup>l</sup> .
20	Su.	3 <sup>d</sup> Sunday after Trinity.	24. ☾ 14 <sup>h</sup> . 9 <sup>l</sup> .
21	M.	In 3 weeks of H. T. 4 ret.	25. ☾ 6 <sup>h</sup> . 11 <sup>l</sup> .
22	Tu.		26. ☾ Ophiuchi 18 <sup>h</sup> . 24 <sup>l</sup> .
23	W.		☾ Ophiuchi 18 <sup>h</sup> . 19 <sup>l</sup> .
24	Th.	St. John Baptist.	28. ☾ 0 <sup>h</sup> . 31 <sup>l</sup> .
25	F.		☾ Im. 12 <sup>h</sup> . 32 <sup>l</sup> .
26	Sa.		* 5 <sup>1</sup> / <sub>2</sub> S. of ☽'s cent. Em. 13 <sup>h</sup> . 52 <sup>l</sup> . * 4 <sup>1</sup> / <sub>2</sub> South.
27	Su.	4 <sup>th</sup> Sunday after Trinity.	
28	M.		
29	Tu.	St. Peter.	
30	W.		

Days of the Month.	Days of the Week.	Sun's Longitude.	Sun's Right Asc. in Time.	Sun's Declin. North.	Equat. of Time. Sub.	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
1	Tu.	2. 10. 43. 52	4. 36. 33. 0	22. 4. 56	2. 40. 4	8, 9
2	W.	2. 11. 41. 16	4. 40. 38. 5	22. 12. 54	2. 31. 5	9, 4
3	Th.	2. 12. 38. 40	4. 44. 44. 5	22. 20. 28	2. 22. 1	9, 7
4	F.	2. 13. 36. 3	4. 48. 50. 8	22. 27. 38	2. 12. 4	10, 1
5	Sa.	2. 14. 33. 25	4. 52. 57. 4	22. 34. 25	2. 2. 3	10, 4
6	Su.	2. 15. 30. 47	4. 57. 4. 5	22. 40. 49	1. 51. 9	10, 8
7	M.	2. 16. 28. 8	5. 1. 11. 9	22. 46. 49	1. 41. 1	11, 2
8	Tu.	2. 17. 25. 30	5. 5. 19. 6	22. 52. 24	1. 29. 9	11, 4
9	W.	2. 18. 22. 50	5. 9. 27. 7	22. 57. 36	1. 18. 5	11, 7
10	Th.	2. 19. 20. 11	5. 13. 36. 0	23. 2. 23	1. 6. 8	12, 0
11	F.	2. 20. 17. 31	5. 17. 44. 5	23. 6. 47	0. 54. 8	12, 2
12	Sa.	2. 21. 14. 50	5. 21. 53. 2	23. 10. 46	0. 42. 6	12, 4
13	Su.	2. 22. 12. 9	5. 26. 2. 2	23. 14. 20	0. 30. 2	12, 5
14	M.	2. 23. 9. 28	5. 30. 11. 4	23. 17. 30	0. 17. 7	12, 7
15	Tu.	2. 24. 6. 46	5. 34. 20. 6	23. 20. 16	0. 5. 0	12, 8
16	W.	2. 25. 4. 3	5. 38. 30. 0	23. 22. 36	Ad: 7. 8	12, 9
17	Th.	2. 26. 1. 20	5. 42. 39. 5	23. 24. 32	0. 20. 7	13, 0
18	F.	2. 26. 58. 36	5. 46. 49. 1	23. 26. 3	0. 33. 7	13, 0
19	Sa.	2. 27. 55. 51	5. 50. 58. 7	23. 27. 9	0. 46. 7	13, 0
20	Su.	2. 28. 53. 6	5. 55. 8. 3	23. 27. 51	0. 59. 7	13, 0
21	M.	2. 29. 50. 20	5. 59. 17. 8	23. 28. 7	1. 12. 7	12, 9
22	Tu.	3. 0. 47. 33	6. 3. 27. 4	23. 27. 59	1. 25. 6	12, 9
23	W.	3. 1. 44. 46	6. 7. 36. 8	23. 27. 26	1. 38. 5	12, 7
24	Th.	3. 2. 41. 58	6. 11. 46. 2	23. 26. 28	1. 51. 2	12, 7
25	F.	3. 3. 39. 10	6. 15. 55. 5	23. 25. 6	2. 3. 9	12, 5
26	Sa.	3. 4. 36. 21	6. 20. 4. 6	23. 23. 19	2. 16. 4	12, 4
27	Su.	3. 5. 33. 32	6. 14. 13. 5	23. 21. 7	2. 28. 8	12, 2
28	M.	3. 6. 30. 42	6. 28. 22. 4	23. 18. 31	2. 41. 0	12, 1
29	Tu.	3. 7. 27. 53	6. 32. 31. 0	23. 15. 30	2. 53. 1	11, 8
30	W.	3. 8. 25. 3	6. 36. 39. 4	23. 12. 4	3. 4. 9	

# III. JUNE 1779. [63]

Days.	Semidia- meter of the Sun.	Time of D <sup>c</sup> passing the Meridian.	Hourly Motion of the Sun.	Logarithm of the Sun's Distance.	Place of the Moon's Node.
	M. S.	M. S.	M. S.		S. D. M.
1	15. 48. 8	1. 8. 3	2. 23. 6	0. 006323	2. 11. 23
7	15. 48. 1	1. 8. 6	2. 23. 3	0. 006662	2. 11. 4
13	15. 47. 6	1. 8. 7	2. 23. 2	0. 006927	2. 10. 45
19	15. 47. 2	1. 8. 8	2. 23. 1	0. 007100	2. 10. 26
25	15. 47. 0	1. 8. 8	2. 23. 0	0. 007188	2. 10. 7

## ECLIPSES of the SATELLITES of JUPITER.

I. Satellite. Emerfions.		II. Satellite. Emerfions.		III. Satellite.	
Days	H. M. S.	Days	H. M. S.	Days	H. M. S.
2	8. 20. 49	2	2. 59. 23	6	22. 49. 25 I
4	2. 49. 13	5	16. 17. 26	7	1. 34. 20 E
5	21. 17. 37	9	5. 35. 11	14	2. 47. 16 I
7	15. 45. 53	12	18. 53. 0	14	5. 31. 9 E
9	10* 14. 12	16	8. 10. 47	21	6. 45. 4 I
11	4. 42. 28	19	21. 28. 34	21	9* 27. 50 E
12	23. 10. 49	23	10* 46. 35	28	10* 42. 46 I
14	17. 39. 3	27	0. 4. 28	28	13. 24. 28 E
16	12. 7. 19	30	13. 22. 16	IV. Satellite.	
18	6. 35. 35				
20	1. 3. 52				
21	19. 32. 5				
23	14. 0. 24				
25	8. 28. 43				
27	2. 56. 55				
28	21. 25. 8				
30	15. 53. 28				
				14	21. 24. 49 I
				15	0. 5. 17 E



[64] JUNE 1779. IV.

Days.	Heliocen- tric Lon- gitude.	Heliocen- tric Lati- tude.	Geocen- tric Lon- gitude.	Geocen- tric La- titude.	Declina- tion.	Passage over Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.

MERCURY. Greatest Elong. 7°.

1	9. 16. 35	6. 7 S	1. 18. 55	3. 53 S	13. 44 N	22. 32
4	9. 25. 58	6. 34	1. 20. 44	3. 48	14. 17	22. 27
7	10. 5. 43	6. 53	1. 25. 8	3. 37	15. 5	22. 25
10	10. 16. 8	6. 59	1. 25. 59	3. 19	16. 2	22. 24
13	10. 27. 21	6. 51	1. 29. 35	2. 55	17. 13	22. 28
16	11. 9. 33	6. 24	2. 3. 33	2. 27	18. 29	22. 29
19	11. 22. 54	5. 35	2. 8. 2	1. 55	19. 47	22. 38
22	0. 7. 32	4. 21	2. 13. 0	1. 21	21. 3	22. 40
25	0. 23. 32	2. 39	2. 18. 23	0. 43	22. 14	22. 58
28	1. 10. 50	0. 37	2. 24. 11	0. 11	23. 9	23. 3
30	1. 22. 58	0. 52 N	2. 28. 14	0. 13 N	23. 27	23. 12

VENUS.

1	11. 9. 36	3. 23 S	1. 4. 45	1. 59 S	11. 15 N	21. 36
7	11. 19. 7	3. 23	1. 11. 49	1. 56	13. 34	21. 38
13	11. 28. 39	3. 17	1. 18. 55	1. 49	15. 43	21. 41
19	0. 8. 13	3. 6	1. 26. 2	1. 40	17. 40	21. 44
25	0. 17. 47	2. 50	2. 3. 11	1. 29	19. 22	21. 49

MARS.

1	8. 1. 57	0. 26 S	7. 15. 0	1. 15 S	17. 33 S	10. 10
7	8. 5. 9	0. 32	7. 13. 42	1. 29	17. 23	9. 40
13	8. 8. 23	0. 38	7. 12. 52	1. 41	17. 19	9. 11
19	8. 11. 39	0. 44	7. 12. 33	1. 52	17. 24	8. 45
25	8. 14. 57	0. 50	7. 12. 42	2. 1	17. 35	8. 21

JUPITER. ☐ 9<sup>d</sup>. 0<sup>h</sup>  $\frac{1}{3}$ .

1	5. 28. 32	1. 18 N	5. 17. 52	1. 21 N	6. 3 N	6. 40
7	5. 28. 59	1. 18	5. 18. 14	1. 20	5. 53	6. 17
13	5. 29. 26	1. 18	5. 18. 42	1. 19	5. 41	5. 55
19	5. 29. 54	1. 18	5. 19. 15	1. 17	5. 28	5. 31
25	6. 0. 21	1. 18	5. 19. 54	1. 16	5. 10	5. 8

SATURN.

1	7. 24. 14	2. 6 N	7. 22. 24	2. 20 N	16. 8 S	10. 44
7	7. 24. 25	2. 6	7. 22. 0	2. 19	16. 3	10. 18
13	7. 24. 36	2. 6	7. 21. 38	2. 18	15. 58	9. 51
19	7. 24. 47	2. 6	7. 21. 18	2. 17	15. 54	9. 25
25	7. 24. 58	2. 5	7. 21. 0	2. 16	15. 51	8. 59

J U N E 1779. [65]					
Days of the Month.	Days of the Week.	Moon's Longitude at Noon.	Moon's Longitude at Midnight.	Moon's Latitude at Noon.	Moon's Latitude at Midn.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
1	Tu.	9. 6. 5. 58	9. 12. 1. 54	2. 13. 21 S	2. 42. 28 S
2	W.	9. 17. 57. 10	9. 23. 52. 2	3. 9. 46	3. 35. 0
3	Th.	9. 29. 46. 54	10. 5. 42. 14	3. 57. 57	4. 18. 21
4	F.	10. 11. 38. 27	10. 17. 36. 7	4. 36. 2	4. 50. 50
5	Sa.	10. 23. 35. 39	10. 29. 37. 36	5. 2. 32	5. 10. 58
6	Sa.	11. 5. 42. 30	11. 11. 50. 53	5. 16. 1	5. 17. 33
7	M.	11. 18. 3. 17	11. 24. 20. 16	5. 15. 23	5. 9. 27
8	Tu.	0. 0. 42. 16	0. 7. 9. 43	4. 59. 40	4. 45. 59
9	W.	0. 13. 43. 4	0. 20. 22. 37	4. 28. 23	4. 6. 55
10	Th.	0. 27. 8. 40	1. 4. 1. 18	3. 41. 42	3. 12. 52
11	F.	1. 11. 0. 28	1. 18. 6. 7	2. 40. 44	2. 5. 39
12	Sa.	1. 25. 17. 53	2. 2. 35. 18	1. 28. 4	0. 48. 35 S
13	Sa.	2. 9. 57. 39	2. 17. 24. 14	0. 7. 51 S	0. 33. 25 N
14	M.	2. 24. 53. 56	3. 2. 25. 48	1. 14. 20 N	1. 54. 9
15	Tu.	3. 9. 58. 38	3. 17. 31. 20	2. 32. 2	3. 7. 13
16	W.	3. 25. 2. 40	4. 2. 31. 38	3. 39. 1	4. 6. 54
17	Th.	4. 9. 57. 15	4. 17. 18. 44	4. 30. 22	4. 49. 9
18	F.	4. 24. 35. 19	5. 1. 46. 34	5. 3. 2	5. 11. 58
19	Sa.	5. 8. 52. 5	5. 15. 51. 43	5. 16. 0	5. 15. 15
20	Sa.	5. 22. 45. 21	5. 29. 33. 2	5. 9. 58	5. 0. 22
21	M.	6. 6. 14. 57	6. 12. 51. 16	4. 46. 46	4. 29. 36
22	Tu.	6. 19. 22. 21	6. 25. 48. 30	4. 9. 7	3. 45. 44
23	W.	7. 2. 10. 2	7. 8. 27. 27	3. 19. 51	2. 51. 45
24	Th.	7. 14. 41. 6	7. 20. 51. 25	2. 21. 55	1. 50. 42
25	F.	7. 26. 58. 40	8. 3. 3. 25	1. 18. 29	0. 45. 35 N
26	S.	8. 9. 5. 53	8. 15. 6. 25	0. 12. 24 N	0. 20. 42
27	Sa.	8. 21. 5. 20	8. 27. 2. 58	0. 53. 26 S	1. 25. 25
28	M.	9. 2. 59. 33	9. 8. 55. 22	1. 56. 20	2. 25. 54
29	Tu.	9. 14. 50. 40	9. 20. 45. 41	2. 53. 49	3. 19. 47
30	W.	9. 26. 40. 41	10. 2. 35. 56	3. 43. 37	4. 5. 1

[66]

JUNE 1779.

VI.

Days of the Month.	Days of the Week.	D's Age.	D's Passage over Merid.	D's Right Ascen. at Noon.	D's Right Ascen. at Midn.	D's Declination at Noon.	D's Declination at Midn.
			H. M.	D. M.	D. M.	D. M.	D. M.
1	Tu.	18	14. 19	276. 45	283. 21	25. 33 S	25. 37 S
2	W.	19	15. 9	289. 55	296. 26	25. 24	24. 54
3	Th.	20	15. 57	302. 53	309. 13	24. 6	23. 2
4	F.	21	16. 44	315. 28	321. 38	21. 43	20. 11
5	Sa.	22	17. 29	327. 1	333. 38	18. 25	16. 28
6	Su.	23	18. 13	339. 30	345. 19	14. 19	12. 1
7	M.	24	18. 56	351. 6	356. 51	9. 34	6. 59
8	Tu.	25	19. 40	2. 38	8. 28	4. 18 S	1. 32 S
9	W.	26	20. 26	14. 21	20. 22	1. 18 N	4. 9 N
10	Th.	27	21. 15	26. 32	32. 52	7. 1	9. 50
11	F.	28	22. 8	39. 26	46. 14	12. 36	15. 14
12	Sa.	29	23. 5	53. 19	60. 41	17. 41	19. 57
13	Su.	1	0	68. 20	76. 15	21. 51	23. 26
14	M.	2	0. 8	84. 23	92. 41	24. 37	25. 21
15	Tu.	3	1. 13	101. 4	109. 25	25. 39	25. 25
16	W.	4	2. 18	117. 43	125. 50	24. 44	23. 37
17	Th.	5	3. 20	133. 43	141. 20	22. 7	20. 15
18	F.	6	4. 17	148. 40	155. 43	18. 6	15. 42
19	Sa.	7	5. 9	162. 30	169. 4	13. 8	10. 25
20	Su.	8	5. 58	175. 25	181. 35	7. 37	4. 46 N
21	M.	9	6. 44	187. 38	193. 34	1. 54 N	0. 57 S
22	Tu.	10	7. 28	199. 27	205. 17	3. 45 S	6. 29
23	W.	11	8. 12	211. 9	217. 1	9. 7	11. 37
24	Th.	12	8. 56	222. 56	228. 56	14. 0	16. 12
25	F.	13	9. 42	235. 0	241. 10	18. 14	20. 3
26	Sa.	14	10. 30	247. 27	253. 47	21. 38	22. 59
27	Su.	15	11. 19	260. 14	266. 45	24. 5	24. 51
28	M.	16	12. 10	273. 19	279. 53	25. 22	25. 36
29	Tu.	17	13. 0	286. 28	293. 2	25. 31	25. 8
30	W.	18	13. 48	299. 30	305. 54	24. 30	23. 33



VII.

JUNE 1779.

[67]

Days of the Month.	Days of the Week.	Semid <sup>r</sup> . p at Noon.	Semid <sup>r</sup> . p at Mid- night.	Hor. Par. p at Noon.	Hor. Par. p at Midnight.	Propor. Lo- gar. at Noon.	Propor. Lo- gar. at Midn.
		M. S.	M. S.	M. S.	M. S.		
1	Tu.	14. 46	14. 47	54. 19	54. 15	5203	5209
2	W.	14. 44	14. 46	54. 13	54. 12	5211	5213
3	Th.	14. 44	14. 48	54. 14	54. 17	5210	5206
4	F.	14. 47	14. 51	54. 23	54. 31	5198	5187
5	Sa.	14. 52	14. 57	54. 41	54. 53	5174	5158
6	Su.	14. 59	15. 6	55. 8	55. 25	5138	5116
7	M.	15. 9	15. 17	55. 45	56. 6	5102	5063
8	Tu.	15. 21	15. 31	56. 30	56. 56	5032	4999
9	W.	15. 35	15. 46	57. 22	57. 50	4966	4931
10	Th.	15. 50	16. 1	58. 18	58. 48	4896	4859
11	F.	16. 6	16. 16	59. 14	59. 40	4827	4795
12	Sa.	16. 20	16. 29	60. 4	60. 26	4766	4740
13	Su.	16. 30	16. 37	60. 44	61. 0	4718	4699
14	M.	16. 37	16. 41	61. 10	61. 15	4702	4682
15	Tu.	16. 39	16. 40	61. 14	61. 11	4683	4686
16	W.	16. 35	16. 35	61. 3	60. 50	4696	4711
17	Th.	16. 28	16. 26	60. 35	60. 17	4729	4751
18	F.	16. 17	16. 14	59. 36	59. 34	4800	4802
19	Sa.	16. 5	16. 1	59. 11	58. 46	4831	4861
20	Su.	15. 52	15. 48	58. 22	57. 58	4891	4921
21	M.	15. 39	15. 35	57. 34	57. 11	4951	4980
22	Tu.	15. 27	15. 23	56. 50	56. 29	5006	5033
23	W.	15. 16	15. 13	56. 9	55. 52	5059	5081
24	Th.	15. 6	15. 5	55. 35	55. 20	5103	5123
25	F.	14. 59	14. 58	55. 7	54. 55	5140	5155
26	Sa.	14. 53	14. 53	54. 45	54. 35	5169	5182
27	Su.	14. 48	14. 49	54. 30	54. 21	5189	5201
28	M.	14. 45	14. 46	54. 15	54. 11	5209	5214
29	Tu.	14. 43	14. 45	54. 8	54. 7	5218	5219
30	W.	14. 43	14. 45	54. 7	54. 9	5219	5217

Distances of  $\gamma$ 's Center from  $\odot$ , and from Stars east of her.

Days	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Fomal- haut.	56. 24. 21	55. 0. 8	53. 36. 8	52. 12. 23
2		45. 18. 10	43. 56. 23	42. 35. 0	41. 14. 3
3	$\alpha$ Arietis.	95. 23. 34	93. 57. 10	92. 30. 45	91. 4. 18
4		83. 51. 33	82. 24. 50	80. 58. 4	79. 31. 13
5		72. 15. 55	70. 48. 36	69. 21. 11	67. 53. 41
6		60. 34. 31	59. 6. 21	57. 38. 4	56. 9. 40
7		48. 46. 10			
4	The Sun.	121. 50. 42	120. 28. 46	119. 0. 45	117. 44. 39
5		110. 52. 40	109. 29. 54	108. 6. 58	106. 43. 53
6		99. 45. 47	98. 21. 34	96. 57. 8	95. 32. 28
7		88. 25. 15	86. 58. 59	85. 32. 25	84. 5. 34
8		76. 46. 19	75. 17. 28	73. 48. 13	72. 18. 36
9		64. 44. 44	63. 12. 45	61. 40. 21	60. 7. 33
10		52. 17. 5	50. 41. 40	49. 5. 50	47. 29. 34
11		39. 21. 38			
15	Regulus.	46. 48. 30	44. 55. 42	43. 3. 6	41. 10. 35
16		31. 50. 59	29. 59. 49	28. 9. 5	26. 18. 48
17		17. 16. 0			
17	Spica $\mu$	71. 3. 10	69. 13. 18	67. 23. 46	65. 34. 33
18		56. 33. 47	54. 46. 44	53. 0. 6	51. 13. 52
19		42. 28. 55	40. 45. 14	39. 2. 2	37. 19. 18
20	Antares.	28. 53. 28			
20		74. 28. 22	72. 46. 43	71. 5. 24	69. 24. 27
21		61. 5. 1	59. 26. 10	57. 47. 40	56. 9. 30
22		48. 3. 35	46. 27. 21	44. 51. 26	43. 15. 50
23	$\alpha$ Aquila	35. 22. 34			
23		85. 18. 55	83. 59. 40	82. 40. 41	81. 22. 0
24		74. 53. 20	73. 36. 40	72. 20. 23	71. 4. 31
25		64. 52. 9	63. 39. 11	62. 26. 48	61. 15. 2
26	Fomal- haut.	55. 26. 5			
26		82. 17. 36	80. 50. 29	79. 23. 30	77. 56. 40
27		70. 44. 43	69. 18. 47	67. 53. 0	66. 27. 23
28		59. 21. 54	57. 57. 22	56. 33. 3	55. 8. 57
29	$\alpha$ Arietis.	48. 12. 13	46. 40. 44	45. 27. 37	44. 5. 49
30		95. 24. 32	96. 58. 7	95. 31. 41	94. 5. 13
J. 1		86. 52. 40			

IX. JUNE 1779. [69]

Distances of  $\gamma$ 's Center from  $\odot$ , and from Star east of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Fomal-	50. 48. 56	49. 25. 45	48. 2. 53	46. 40. 22
2	haut.	39. 53. 32			
3	$\alpha$ Arietis.	101. 8. 58	99. 42. 38	98. 16. 18	96. 49. 56
4		89. 37. 50	88. 11. 19	86. 44. 47	85. 18. 12
5		78. 4. 19	76. 37. 20	75. 10. 17	73. 43. 8
6		66. 26. 4	64. 58. 21	63. 30. 31	62. 2. 34
		54. 41. 10	53. 12. 34	51. 43. 52	50. 15. 4
4	The Sun.	116. 22. 29	115. 0. 13	113. 37. 49	112. 15. 18
5		105. 20. 38	103. 57. 13	102. 33. 36	101. 9. 47
6		94. 7. 33	92. 42. 23	91. 10. 56	89. 51. 14
7		82. 38. 22	81. 10. 53	79. 43. 2	78. 14. 51
8		70. 48. 37	69. 18. 15	67. 47. 29	66. 16. 18
9		58. 34. 19	57. 0. 40	55. 26. 34	53. 52. 3
10		45. 52. 50	44. 15. 41	42. 38. 6	41. 0. 5
15	Regulus.	39. 18. 12	37. 26. 2	35. 34. 6	33. 42. 25
16		24. 29. 4	22. 39. 40	20. 51. 6	19. 3. 11
17	Spica $\Upsilon$	63. 45. 41	61. 57. 9	60. 9. 0	58. 21. 13
18		49. 28. 1	47. 42. 36	45. 57. 36	44. 13. 3
19		35. 37. 4	33. 55. 21	32. 14. 10	30. 33. 32
20	Antares.	67. 43. 52	65. 3. 38	64. 23. 44	62. 44. 12
21		54. 31. 41	52. 54. 11	51. 16. 59	49. 40. 8
22		41. 40. 32	40. 5. 34	38. 30. 56	36. 56. 35
23	$\alpha$ Aquilæ.	80. 3. 36	78. 45. 31	77. 27. 46	76. 10. 22
24		69. 49. 6	68. 34. 9	67. 19. 39	66. 5. 39
25		60. 3. 51	58. 53. 21	57. 43. 32	56. 34. 26
26	Fomal-	76. 29. 59	75. 3. 27	73. 37. 3	72. 10. 49
27		65. 1. 56	63. 36. 39	62. 11. 33	60. 46. 37
28		53. 45. 4	52. 21. 27	50. 58. 6	49. 35. 2
29		42. 44. 23			
29	$\alpha$ Arietis.	104. 10. 8	102. 43. 44	101. 17. 26	99. 50. 56
30		92. 38. 44	91. 12. 15	89. 45. 45	88. 19. 13



[70]

JUNE 1779.

X.

Distances of  $\gamma$ 's Center from  $\odot$ , and from Stars west of her.

Days	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1		29. 27. 3	30. 55. 3	32. 23. 4	33. 51. 6
2		41. 11. 30	42. 39. 36	44. 7. 42	45. 35. 48
3		52. 56. 31	54. 24. 43	55. 52. 57	57. 21. 13
4	Antares.	64. 43. 25	66. 12. 4	67. 40. 49	69. 9. 40
5		76. 35. 32	78. 5. 6	79. 34. 49	81. 4. 43
6		88. 36. 50	90. 7. 51	91. 39. 5	93. 10. 34
7		100. 51. 40	102. 24. 42	103. 58. 3	105. 31. 43
8		68. 37. 0	69. 54. 55	71. 13. 27	72. 32. 36
9	Aquila.	79. 16. 54	80. 39. 22	82. 2. 16	83. 25. 42
10		90. 29. 17			
10	Fomal-	57. 25. 12	59. 2. 19	60. 39. 58	62. 18. 15
11	haut.	70. 37. 58	72. 19. 30	74. 1. 30	75. 43. 39
12		84. 23. 6	86. 8. 7	87. 53. 30	89. 39. 15
17		44. 6. 56	45. 50. 18	47. 33. 22	49. 16. 9
18		57. 45. 11	59. 25. 57	61. 6. 22	62. 46. 25
19		71. 1. 14	72. 39. 5	74. 16. 35	75. 53. 42
20	The Sun.	83. 53. 45	85. 28. 40	87. 3. 13	88. 37. 25
21		95. 23. 16	97. 55. 26	99. 27. 15	101. 58. 47
22		108. 31. 46	110. 1. 29	111. 30. 55	113. 0. 4
23		120. 21. 51			
21		39. 40. 28	41. 19. 1	42. 57. 18	44. 35. 19
22	Regulus.	52. 41. 19	54. 17. 43	55. 53. 52	57. 29. 46
23		65. 25. 29	66. 59. 55	68. 34. 9	70. 8. 9
24		77. 55. 5	79. 27. 53	81. 0. 30	82. 32. 57
25		36. 21. 47	37. 52. 6	39. 22. 22	40. 52. 35
26	Spica $\alpha$	48. 22. 39	49. 52. 27	51. 22. 10	52. 51. 48
27		60. 18. 50	61. 48. 2	63. 17. 11	64. 46. 16
28		72. 10. 45			
28		26. 23. 25	27. 51. 6	29. 18. 50	30. 46. 42
29	Antares.	38. 6. 35	39. 34. 38	41. 2. 42	42. 30. 48
30		49. 51. 34	51. 19. 47	52. 48. 1	54. 16. 17
31		61. 38. 1			

XI. JUNE 1779. [71]

Distances of  $\gamma$ 's Center from  $\odot$ , and from Stars west of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Antares.	35. 19. 9	36. 47. 13	38. 15. 18	39. 43. 24
2		47. 3. 55	48. 32. 3	50. 0. 11	51. 28. 20
3		58. 49. 32	60. 17. 54	61. 46. 20	63. 14. 51
4		70. 38. 36	72. 7. 39	73. 36. 49	75. 6. 7
5		82. 34. 46	84. 5. 0	85. 35. 25	87. 6. 2
6		94. 42. 14	96. 14. 15	97. 46. 27	99. 18. 55
7		107. 5. 42			
7	$\alpha$ Aquilæ.	63. 32. 1	64. 47. 13	66. 3. 6	67. 19. 44
8		73. 52. 21	75. 12. 40	76. 33. 33	77. 54. 58
9		84. 49. 34	86. 13. 52	87. 38. 37	89. 3. 45
10	Fomalhaut.	63. 57. 7	65. 36. 31	67. 16. 28	68. 56. 57
11		77. 26. 57	79. 10. 22	80. 54. 13	82. 38. 27
12		91. 25. 20			
16	The Sun.	37. 10. 44	38. 55. 9	40. 39. 21	42. 23. 17
17		50. 58. 37	52. 40. 46	54. 22. 34	56. 4. 3
18		64. 26. 9	66. 5. 27	67. 44. 25	69. 23. 0
19		77. 30. 27	79. 6. 50	80. 42. 50	82. 18. 29
20		90. 11. 16	91. 44. 46	93. 17. 56	94. 50. 46
21		102. 29. 59	104. 0. 52	105. 31. 28	107. 1. 46
22		114. 28. 57	115. 57. 34	117. 25. 55	118. 54. 1
20	Regulus.	33. 3. 34	34. 43. 11	36. 22. 33	38. 1. 39
21		46. 13. 4	47. 50. 32	49. 27. 44	51. 4. 39
22		59. 5. 24	60. 40. 47	62. 15. 55	63. 50. 49
23		71. 41. 57	73. 15. 33	74. 48. 55	76. 22. 6
24		84. 5. 13			
24	Spica $\kappa$	30. 20. 14	31. 50. 39	33. 21. 3	34. 51. 26
25		42. 22. 45	43. 52. 50	45. 22. 51	46. 52. 47
26		54. 21. 22	55. 50. 51	57. 20. 15	58. 49. 35
27		66. 15. 17	67. 44. 14	69. 13. 8	70. 41. 58
28	Antares.	32. 14. 34	33. 42. 31	35. 10. 30	36. 38. 34
29		43. 58. 55	45. 27. 3	46. 55. 12	48. 23. 22
30		55. 44. 34	57. 12. 53	58. 41. 14	60. 9. 37

Configurations of the SATELLITES of JUPITER  
at 10 o' Clock in the Evening.

1	6.	3.	⊙	1.	2.
2	4.	2.	1.	⊙	
3	4.	2.	⊙	3.	1.
4	4.	1.	⊙	2.	3.
5		4.	⊙	2.	1.
6		2.	1.	⊙	3.
7		2.	⊙	1.	4.
8		1.	⊙	2.	4.
9		3.	2.	1.	⊙
10		2.	⊙	3.	1.
11		1.	⊙	2.	3.
12			⊙	2.	3.
13		2.	1.	⊙	3.
14		2.	⊙	1.	4.
15		3.	4.	1.	⊙
16		4.	2.	1.	⊙
17	4.	2.	3.	⊙	1.
18	4.	1.	⊙	2.	3.
19	4.		⊙	2.	1.
20	4.	2.	1.	⊙	3.
21		4.	3.	2.	⊙
22		3.	4.	1.	⊙
23		3.	2.	⊙	1.
24		2.	3.	⊙	1.
25		1.	⊙	2.	3.
26			⊙	2.	3.
27		2.	1.	⊙	3.
28			3.	2.	⊙
29		2.	1.	⊙	3.
30		3.	2.	⊙	1.



I. JULY 1779. [73]		
Days of the Month.	Days of the Week.	Sundays, Holidays, &c.
1	Th.	
2	F.	Visitation of B.V. Mary.
3	Sa.	
4	Su.	5th Sunday after Trinity. Tr.
5	M.	[of S. M.]
6	Tu.	Camb. Commencement.
7	W.	
8	Th.	
9	F.	Camb. Term ends.
10	Sa.	
11	Su.	6th Sunday after Trinity.
12	M.	Oxford Act.
13	Tu.	
14	W.	
15	Th.	Swithin.
16	F.	
17	Sa.	Oxford Term ends.
18	Su.	7th Sunday after Trinity.
19	M.	
20	Tu.	Margaret.
21	W.	
22	Th.	Q. of Denmark born 1751.
23	F.	[Magdalen.]
24	Sa.	
25	Su.	8th Sunday after Trinity.
26	M.	St. James. [St. Anne]
27	Tu.	
28	W.	
29	Th.	
30	F.	
31	Sa.	

[74]		J U L Y 1779.					II.
Days of the Month.	Days of the Week.	Sun's Longitude.	Sun's Right Asc. in Time.	Sun's Declin. North.	Equat. of Time. Add.	Diff.	
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.	
1	Th.	3. 9. 22. 14	6. 40. 47, 5	23. 8. 16	3. 16, 3	11, 5	
2	F.	3. 10. 19. 24	6. 44. 55, 5	23. 4. 2	3. 27, 8	11, 2	
3	Sa.	3. 11. 16. 35	6. 49. 3, 2	22. 59. 24	3. 39, 0	10, 9	
4	Su.	3. 12. 13. 47	6. 53. 10, 7	22. 54. 21	3. 49, 9	10, 5	
5	M.	3. 13. 10. 58	6. 57. 17, 8	22. 48. 55	4. 0, 4	10, 3	
6	Tu.	3. 14. 8. 10	7. 1. 24, 6	22. 43. 5	4. 10, 7	10, 0	
7	W.	3. 15. 5. 23	7. 5. 31, 1	22. 36. 51	4. 20, 7	9, 6	
8	Th.	3. 16. 2. 37	7. 9. 37, 3	22. 30. 14	4. 30, 3	9, 2	
9	F.	3. 16. 59. 50	7. 13. 43, 1	22. 23. 13	4. 39, 5	8, 8	
10	Sa.	3. 17. 57. 5	7. 17. 48, 6	22. 15. 49	4. 48, 3	8, 4	
11	Su.	3. 18. 54. 19	7. 21. 53, 6	22. 8. 2	4. 56, 7	8, 0	
12	M.	3. 19. 51. 34	7. 25. 58, 1	21. 59. 52	5. 4, 7	7, 6	
13	Tu.	3. 20. 48. 50	7. 30. 2, 3	21. 51. 20	5. 12, 3	7, 1	
14	W.	3. 21. 46. 7	7. 34. 6, 0	21. 42. 24	5. 19, 4	6, 7	
15	Th.	3. 22. 43. 23	7. 38. 9, 2	21. 33. 7	5. 26, 1	6, 1	
16	F.	3. 23. 40. 40	7. 42. 11, 9	21. 23. 28	5. 32, 2	5, 6	
17	Sa.	3. 24. 37. 58	7. 46. 14, 1	21. 13. 26	5. 37, 8	5, 0	
18	Su.	3. 25. 35. 15	7. 50. 15, 7	21. 3. 4	5. 42, 8	4, 5	
19	M.	3. 26. 32. 32	7. 54. 16, 7	20. 52. 20	5. 47, 3	3, 9	
20	Tu.	3. 27. 29. 50	7. 58. 17, 2	20. 41. 14	5. 51, 2	3, 5	
21	W.	3. 28. 27. 8	8. 2. 17, 2	20. 29. 48	5. 54, 7	2, 7	
22	Th.	3. 29. 24. 26	8. 6. 16, 4	20. 18. 2	5. 57, 4	2, 2	
23	F.	4. 0. 21. 45	8. 10. 15, 3	20. 5. 54	5. 59, 6	1, 5	
24	Sa.	4. 1. 19. 4	8. 14. 13, 4	19. 53. 27	6. 1, 1	1, 0	
25	Su.	4. 2. 16. 23	8. 18. 10, 9	19. 40. 40	6. 2, 1	0, 4	
26	M.	4. 3. 13. 43	8. 22. 7, 8	19. 27. 34	6. 2, 5	0, 2	
27	Tu.	4. 4. 11. 4	8. 26. 4, 2	19. 14. 8	6. 2, 3	0, 9	
28	W.	4. 5. 8. 25	8. 29. 59, 9	19. 0. 23	6. 1, 4	1, 4	
29	Th.	4. 6. 5. 47	8. 33. 55, 0	18. 46. 19	6. 0, 0	1, 9	
30	F.	4. 7. 3. 10	8. 37. 49, 6	18. 31. 57	5. 58, 1	2, 7	
31	Sa.	4. 8. 0. 34	8. 41. 43, 5	18. 17. 16	5. 55, 4		

# III. JULY 1779. [75]

Days.	Semidia- meter of the Sun.	Time of D <sup>c</sup> passing the Meridian.	Hourly Motion of the Sun.	Logarithm of the Sun's Distance.	Place of the Moon's Node.
	M. S.	M. S.	M. S.		S. D. M.
1	15. 46. 9	1. 8. 6	2. 23. 0	0. 007223	2. 9. 48
7	15. 47. 0	1. 8. 4	2. 23. 0	0. 007201	2. 9. 28
13	15. 47. 2	1. 8. 0	2. 23. 1	0. 007105	2. 9. 9
19	15. 47. 6	1. 7. 6	2. 23. 2	0. 006904	2. 8. 50
25	15. 48. 1	1. 7. 1	2. 23. 3	0. 006632	2. 8. 31

## ECLIPSES of the SATELLITES of JUPITER.

I. Satellite. Emerfions.		II. Satellite. Emerfions.		III. Satellite.	
Days	H. M. S.	Days	H. M. S.	Days	H. M. S.
2	10. 21. 45*	4	2. 40. 11	5	14. 40. 41 I
4	4. 50. 5	7	15. 58. 8	5	17. 21. 18 E
5	23. 18. 25	11	5. 16. 12	12	18. 38. 45 I
7	17. 46. 44	14	16. 34. 21	12	21. 18. 18 E
9	12. 15. 1	18	7. 52. 36	19	22. 37. 8 I
11	6. 43. 22	21	21. 10. 57	20	1. 15. 36 E
13	1. 11. 49	25	10. 29. 26*	27	2. 35. 59 I
14	19. 40. 10	28	23. 48. 3	27	5. 13. 21 E
16	14. 8. 37				
18	8. 37. 3*			IV. Satellite.	
20	3. 5. 33			1	15. 22. 56 I
21	21. 34. 1			1	17. 54. 47 E
23	16. 2. 34			18	*9. 22. 15 I
25	10. 31. 5			18	11. 45. 0 E
27	4. 59. 40				
28	23. 28. 13				
30	17. 56. 54				



[76] JULY 1779. IV.						
Days.	Heliocen- tric Lon- gitude.	Heliocen- tric Lati- tude.	Geocen- tric Lon- gitude.	Geocen- tric La- titude.	Declina- tion.	Passage over Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.
MERCURY. Sup. $\delta$ 8 <sup>d</sup> . 15 <sup>n</sup> .						
1	1. 29. 10	1. 37 N	3. 0. 19	0. 24 N	23. 52 N	23. 26
4	2. 18. 4	3. 44	3. 6. 42	0. 53	24. 11	23. 41
7	3. 6. 54	5. 27	3. 13. 10	1. 17	24. 5	23. 57
10	3. 25. 0	6. 32	3. 19. 38	1. 34	23. 35	0. 9
13	4. 11. 55	6. 58	3. 25. 58	1. 45	22. 42	0. 24
16	4. 27. 25	6. 51	4. 2. 6	1. 49	21. 29	0. 38
19	5. 11. 31	6. 18	4. 8. 0	1. 47	20. 0	0. 50
22	5. 24. 18	5. 29	4. 13. 38	1. 39	18. 20	1. 1
25	6. 5. 57	4. 30	4. 19. 0	1. 27	16. 31	1. 11
28	6. 16. 40	3. 25	4. 24. 8	1. 11	14. 36	1. 18
31	6. 26. 38	2. 19	4. 28. 50	0. 51	12. 38	1. 25
VENUS.						
1	0. 27. 22	2. 29 S	2. 10. 21	1. 16 S	20. 46 N	21. 56
7	1. 6. 58	2. 4	2. 17. 33	1. 2	21. 52	22. 2
13	1. 16. 35	1. 36	2. 24. 46	0. 47	22. 35	22. 8
19	1. 26. 13	1. 4	3. 2. 0	0. 31	22. 56	22. 15
25	2. 5. 52	0. 31	3. 9. 16	0. 15	22. 54	22. 23
MARS.						
1	8. 18. 17	0. 55 S	7. 13. 21	2. 8 S	17. 54 S	7. 59
7	8. 21. 40	1. 1	7. 14. 25	2. 14	18. 19	7. 38
13	8. 25. 4	1. 6	7. 15. 53	2. 19	18. 49	7. 20
19	8. 28. 30	1. 12	7. 17. 42	2. 22	19. 24	7. 3
25	9. 1. 58	1. 17	7. 19. 50	2. 25	20. 2	6. 48
JUPITER.						
1	6. 0. 48	1. 18 N	5. 20. 37	1. 15 N	4. 52 N	4. 46
7	6. 1. 16	1. 18	5. 21. 25	1. 15	4. 32	4. 25
13	6. 1. 43	1. 19	5. 22. 17	1. 14	4. 11	4. 3
19	6. 2. 10	1. 19	5. 23. 13	1. 13	3. 48	3. 42
25	6. 2. 37	1. 19	5. 24. 11	1. 11	3. 24	3. 22
SATURN.						
1	7. 25. 9	2. 5 N	7. 20. 46	2. 14 N	15. 48 S	8. 33
7	7. 25. 20	2. 5	7. 20. 34	2. 12	15. 48	8. 9
13	7. 25. 31	2. 4	7. 20. 26	2. 10	15. 47	7. 44
19	7. 25. 42	2. 4	7. 20. 22	2. 9	15. 47	7. 19
25	7. 25. 53	2. 4	7. 20. 21	2. 8	15. 48	6. 55

V.		J U L Y 1779.				[77]
Days of the Month.	Days of the Week.	Moon's Longitude at Noon.	Moon's Longitude at Midnight.	Moon's Latitude at Noon.	Moon's Latitude at Midnight.	
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.	
1	Th.	10. 8. 31. 40	10. 14. 28. 13	4. 23. 48 S	4. 39. 45 S	
2	F.	10. 20. 25. 52	10. 26. 24. 58	4. 52. 44	5. 2. 36	
3	Sa.	11. 2. 25. 55	11. 8. 28. 59	5. 9. 6	5. 12. 14	
4	Su.	11. 14. 34. 42	11. 20. 43. 28	5. 11. 54	5. 7. 58	
5	M.	11. 26. 55. 40	0. 3. 11. 52	5. 0. 27	4. 49. 15	
6	Th.	0. 9. 32. 24	0. 15. 57. 53	4. 34. 26	4. 15. 57	
7	W.	0. 22. 28. 37	0. 29. 5. 7	3. 53. 57	3. 28. 32	
8	Th.	1. 5. 47. 38	1. 12. 36. 36	2. 59. 54	2. 28. 14	
9	F.	1. 19. 32. 7	1. 26. 34. 18	1. 53. 56	1. 17. 21 S	
10	Sa.	2. 3. 43. 6	2. 10. 58. 17	0. 39. 5 S	0. 0. 25 N	
11	Su.	2. 18. 19. 25	2. 25. 45. 57	0. 40. 24 N	1. 20. 7	
12	M.	3. 3. 16. 58	3. 10. 51. 32	1. 58. 50	2. 35. 42	
13	Tu.	3. 18. 28. 26	3. 26. 6. 24	3. 9. 57	3. 40. 52	
14	W.	4. 3. 44. 3	4. 11. 20. 44	4. 7. 45	4. 30. 8	
15	Th.	4. 18. 53. 6	4. 26. 22. 1	4. 47. 39	5. 0. 2	
16	F.	5. 3. 45. 48	5. 11. 5. 39	5. 7. 16	5. 9. 24	
17	Sa.	5. 18. 14. 58	5. 25. 19. 21	5. 6. 35	4. 59. 6	
18	Su.	6. 2. 16. 33	6. 9. 6. 39	4. 47. 13	4. 31. 34	
19	M.	6. 15. 49. 47	6. 22. 26. 11	4. 12. 18	3. 50. 3	
20	Tu.	6. 28. 56. 19	7. 5. 20. 34	3. 25. 6	2. 57. 56	
21	W.	7. 11. 39. 29	7. 17. 53. 37	2. 28. 57	1. 58. 32	
22	Th.	7. 24. 3. 31	8. 0. 9. 46	1. 27. 6	0. 54. 58 N	
23	F.	8. 6. 12. 54	8. 12. 13. 29	0. 22. 31 N	0. 9. 55 S	
24	Sa.	8. 18. 12. 0	8. 24. 8. 58	0. 42. 3 S	1. 13. 31	
25	Su.	9. 0. 4. 48	9. 5. 59. 54	1. 44. 3	2. 13. 21	
26	M.	9. 11. 54. 37	9. 17. 49. 18	2. 41. 12	3. 7. 8	
27	Tu.	9. 23. 44. 13	9. 29. 39. 38	3. 31. 6	3. 52. 46	
28	W.	10. 5. 35. 45	10. 11. 32. 48	4. 11. 56	4. 28. 22	
29	Th.	10. 17. 30. 57	10. 23. 30. 24	4. 41. 55	4. 52. 22	
30	F.	10. 29. 31. 21	11. 5. 33. 57	4. 59. 38	5. 3. 34	
31	Sa.	11. 11. 38. 27	11. 17. 45. 4	5. 4. 3	5. 1. 9	



[78]		J U L Y 1779.				VI.	
Days of the Month.	Days of the Week.	D's Age.	D's Pafs- age over Merid.	D's Right Ascen. at Noon.	D's Right Asc. at Midn.	D's De- clination at Noon.	D's De- clination at Midn.
			H. M.	D. M.	D. M.	D. M.	D. M.
1	Th.	19	14. 35	312. 12	318. 23	22. 23 S	20. 58 S
2	F.	20	15. 21	324. 29	330. 27	19. 19	17. 27
3	Sa.	21	16. 4	336. 20	342. 7	15. 24	13. 13
4	Su.	22	16. 47	347. 50	353. 30	10. 52	8. 23
5	M.	23	17. 29	359. 11	4. 51	5. 49	3. 9 S
6	Tu.	24	18. 14	10. 34	16. 21	0. 25 S	2. 21 N
7	W.	25	19. 0	22. 14	28. 17	5. 8 N	7. 55
8	Th.	26	19. 49	34. 30	40. 56	10. 38	13. 17
9	F.	27	20. 42	47. 37	54. 35	15. 48	18. 9
10	Sa.	28	21. 41	61. 50	69. 24	20. 17	22. 7
11	Su.	29	22. 44	77. 14	85. 20	23. 37	24. 44
12	M.	30	23. 51	93. 38	102. 3	25. 24	25. 36
13	Tu.	1	0	110. 29	118. 52	25. 19	24. 34
14	W.	2	0. 57	127. 6	135. 8	23. 19	21. 44
15	Th.	3	1. 58	142. 54	150. 23	19. 44	17. 26
16	F.	4	2. 54	157. 36	164. 32	14. 54	12. 12
17	Sa.	5	3. 46	171. 13	177. 42	9. 21	6. 26
18	Su.	6	4. 34	184. 0	190. 10	3. 29 N	0. 33 N
19	M.	7	5. 20	196. 12	202. 11	2. 21 S	5. 11 S
20	Tu.	8	6. 5	208. 7	214. 3	7. 55	10. 31
21	W.	9	6. 50	220. 0	226. 0	12. 59	15. 18
22	Th.	10	7. 36	232. 3	238. 12	17. 24	19. 18
23	F.	11	8. 24	244. 25	250. 43	21. 0	22. 26
24	Sa.	12	9. 13	257. 6	263. 36	23. 38	24. 34
25	Su.	13	10. 3	270. 5	276. 38	25. 12	25. 33
26	M.	14	10. 53	283. 13	289. 46	25. 37	25. 22
27	Tu.	15	11. 42	296. 17	302. 44	24. 51	24. 2
28	W.	16	12. 30	309. 5	315. 20	22. 57	21. 38
29	Th.	17	13. 16	321. 29	327. 32	20. 4	18. 18
30	F.	18	14. 1	333. 27	339. 17	16. 19	14. 11
31	Sa.	19	14. 44	345. 2	350. 43	11. 53	9. 28



VII. JULY 1779. [79]

Days of the Month.	Days of the Week.	Semid. d at Noon.	Semid. d at Mid-night.	Hor. Par. d at Noon.	Hor. Par. d at Midnight.	Propor. Lo- gar. at Noon.	Propor. Lo- gar. at Midn.
1	Th.	14. 46	14. 47	54. 11	54. 16	5214	5207
2	F.	14. 49	14. 51	54. 22	54. 31	5199	5187
3	Sa.	14. 54	14. 57	54. 41	54. 53	5174	5158
4	Su.	15. 2	15. 6	55. 9	55. 24	5137	5118
5	M.	15. 11	15. 16	55. 42	56. 3	5094	5067
6	Tu.	15. 20	15. 29	56. 24	56. 49	5040	5008
7	W.	15. 36	15. 43	57. 14	57. 42	4976	4941
8	Th.	15. 51	15. 58	58. 8	58. 37	4908	4872
9	F.	16. 6	16. 14	59. 6	59. 33	4837	4804
10	Sa.	16. 21	16. 28	59. 59	60. 25	4772	4741
11	Su.	16. 33	16. 39	60. 44	61. 2	4718	4697
12	M.	16. 42	16. 45	61. 16	61. 27	4680	4668
13	Tu.	16. 45	16. 46	61. 30	61. 30	4664	4664
14	W.	16. 44	16. 41	61. 25	61. 13	4670	4684
15	Th.	16. 37	16. 32	61. 0	60. 42	4699	4721
16	F.	16. 27	16. 20	60. 21	59. 57	4746	4775
17	Sa.	16. 13	16. 5	59. 30	59. 3	4808	4841
18	Su.	15. 58	15. 50	58. 34	58. 7	4876	4910
19	M.	15. 43	15. 35	57. 39	57. 13	4945	4977
20	Tu.	15. 28	15. 22	56. 47	56. 24	5010	5040
21	W.	15. 16	15. 11	56. 2	55. 42	5068	5094
22	Th.	15. 5	15. 1	55. 23	55. 7	5119	5140
23	F.	14. 58	14. 53	54. 54	54. 39	5157	5177
24	Sa.	14. 51	14. 48	54. 31	54. 20	5187	5202
25	Su.	14. 47	14. 46	54. 16	54. 10	5207	5215
26	M.	14. 45	14. 45	54. 8	54. 6	5218	5221
27	Tu.	14. 44	14. 45	54. 6	54. 8	5221	5218
28	W.	14. 46	14. 46	54. 10	54. 12	5215	5213
29	Th.	14. 48	14. 49	54. 18	54. 24	5205	5197
30	F.	14. 52	14. 54	54. 32	54. 40	5186	5175
31	Sa.	14. 57	15. 0	54. 52	55. 2	5159	5146

Distances of $\gamma$ 's Center from $\odot$ , and from Stars east of her.					
Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	$\alpha$ Arietis.	86. 52. 40	85. 26. 5	83. 59. 29	82. 32. 50
2		75. 19. 6	73. 52. 14	72. 25. 20	70. 58. 23
3		63. 42. 50	62. 15. 34	60. 48. 15	59. 20. 53
4	Aldeba- ran.	81. 41. 21	80. 10. 13	78. 38. 52	77. 7. 19
5		69. 26. 21	67. 53. 26	66. 20. 15	64. 46. 49
6		56. 55. 34	55. 20. 26	53. 45. 0	52. 9. 14
4	The Sun.	117. 31. 41	116. 7. 24	114. 42. 55	113. 18. 14
5		106. 11. 27	104. 45. 22	103. 19. 0	101. 52. 22
6		94. 34. 53	93. 6. 27	91. 37. 40	90. 8. 34
7		82. 37. 48	81. 6. 32	79. 34. 52	78. 2. 50
8		70. 16. 40	68. 42. 11	67. 7. 16	65. 31. 56
9		57. 28. 55	55. 51. 2	54. 12. 44	52. 34. 0
10		44. 14. 12	42. 33. 3	40. 51. 32	39. 9. 39
15	Antares.	62. 11. 46	60. 20. 14	58. 29. 3	56. 38. 11
16		47. 29. 32	45. 41. 2	43. 53. 0	42. 5. 28
17		33. 15. 22	31. 31. 4	29. 47. 23	28. 4. 23
18	Spica $\mu$	65. 0. 32	63. 18. 6	61. 36. 6	59. 54. 32
19		51. 33. 8	49. 54. 8	48. 15. 33	46. 37. 23
20		38. 32. 39	36. 56. 55	35. 21. 36	33. 46. 42
21		25. 58. 27			
21	$\alpha$ Aquilæ.	77. 27. 42	76. 9. 44	74. 52. 12	73. 35. 6
22		67. 16. 44	66. 2. 36	64. 49. 2	63. 36. 5
23		57. 40. 47			
23	Fomal- haut.	85. 2. 36	83. 35. 27	82. 8. 27	80. 41. 37
24		73. 29. 51	72. 3. 58	70. 38. 15	69. 12. 42
25		62. 7. 22	60. 42. 47	59. 18. 24	57. 54. 12
26		50. 56. 20			
26	$\alpha$ Pegasi.	70. 45. 16	69. 25. 30	68. 5. 56	66. 46. 32
27		60. 12. 58	58. 55. 2	57. 37. 25	56. 20. 9
28		49. 59. 37			
28	$\alpha$ Arietis.	89. 43. 27	88. 16. 40	86. 49. 51	85. 22. 59
29		78. 8. 0	76. 40. 53	75. 13. 44	73. 46. 32
30		66. 29. 54			
30	Aldeba- ran.	96. 38. 24	95. 8. 38	93. 38. 46	92. 8. 46
31		84. 37. 0	83. 6. 18	81. 35. 29	80. 4. 32
A. 1		72. 27. 28			



## IX. JULY 1779. [81]

Distances of  $\gamma$ 's Center from  $\odot$ , and from Stars east of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	$\alpha$ Arietis.	81. 6. 9	79. 39. 27	78. 12. 43	76. 45. 56
2		69. 31. 23	68. 4. 19	66. 37. 13	65. 10. 3
3		57. 53. 28			
3	Aldebaran.	87. 44. 7	86. 13. 41	84. 43. 5	83. 12. 19
4		75. 35. 34	74. 3. 37	72. 31. 25	70. 59. 0
5		63. 13. 7	61. 39. 10	60. 4. 56	58. 30. 24
6		50. 33. 8			
3	The Sun.	123. 6. 55	121. 43. 23	120. 19. 40	118. 55. 46
4		111. 53. 20	110. 28. 13	109. 2. 53	107. 37. 17
5		100. 25. 27	98. 58. 16	97. 30. 47	96. 2. 59
6		88. 39. 7	87. 9. 20	85. 39. 11	84. 8. 41
7		76. 30. 24	74. 57. 35	73. 24. 21	71. 50. 42
8		63. 56. 11	62. 20. 0	60. 43. 24	59. 6. 22
9		50. 54. 52	49. 15. 18	47. 35. 20	45. 54. 58
10		37. 27. 25			
14	Spica $\kappa$	69. 40. 41	67. 48. 4	65. 55. 42	64. 3. 35
15		54. 47. 40	52. 57. 32	51. 7. 47	49. 18. 28
16		40. 18. 23	38. 31. 48	36. 45. 46	35. 0. 18
17		26. 22. 2			
17	Antares.	71. 54. 40	70. 10. 29	68. 26. 45	66. 43. 27
18		58. 13. 27	56. 32. 44	54. 52. 27	53. 12. 35
19		44. 59. 38	43. 22. 17	41. 45. 20	40. 8. 47
20		32. 12. 12	30. 38. 8	29. 4. 29	27. 31. 14
21	$\alpha$ Aquilæ.	72. 18. 27	71. 2. 16	69. 46. 35	68. 31. 27
22		62. 23. 42	61. 11. 57	60. 0. 54	58. 50. 30
23	Fomalhaut.	79. 14. 56	77. 48. 25	76. 22. 4	74. 55. 53
24		67. 47. 18	66. 22. 4	66. 57. 0	63. 32. 6
25		56. 30. 12	55. 6. 24	53. 42. 50	52. 19. 28
26	$\alpha$ Pegasi.	65. 27. 20	64. 8. 22	62. 49. 38	61. 31. 11
27		55. 3. 12	53. 46. 38	52. 30. 32	51. 14. 51
28	$\alpha$ Arietis.	83. 56. 4	82. 29. 7	81. 2. 7	79. 35. 5
29		72. 19. 18	70. 52. 1	69. 24. 41	67. 57. 19
30	Aldebaran.	90. 38. 40	89. 8. 26	87. 38. 6	85. 7. 36
31		78. 33. 26	77. 2. 10	75. 30. 47	73. 59. 13



Distances of  $\beta$ 's Center from  $\odot$ , and from Stars west of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Antares.	61. 38. 2	63. 6. 30	64. 35. 1	66. 3. 35
2		73. 27. 23	74. 56. 22	76. 25. 26	77. 54. 36
3		85. 22. 5	86. 51. 56	88. 21. 56	89. 52. 6
4		97. 25. 14	98. 56. 24	100. 27. 47	101. 59. 22
5	$\alpha$ Aquilæ.	65. 31. 58	66. 46. 51	68. 2. 18	69. 18. 21
6		75. 46. 35	77. 5. 45	78. 25. 23	79. 45. 26
7		86. 32. 4	87. 54. 33	89. 17. 24	90. 40. 35
8	Fomal- haut.	65. 40. 17	67. 17. 23	68. 54. 59	70. 33. 7
9		78. 51. 8	80. 32. 10	82. 13. 40	83. 55. 39
10	$\alpha$ Arietis.	30. 52. 58	32. 31. 5	34. 10. 29	35. 51. 7
11		44. 28. 56	46. 14. 48	48. 1. 17	49. 48. 22
12		58. 51. 10			
16	The Sun.	40. 21. 23	42. 3. 26	43. 45. 6	45. 26. 25
17		53. 47. 4	55. 25. 59	57. 4. 28	58. 42. 31
18		66. 46. 28	68. 21. 59	69. 57. 3	71. 31. 45
19		79. 19. 0	80. 51. 14	82. 23. 4	83. 54. 32
20		91. 26. 19	92. 55. 36	94. 24. 34	95. 53. 11
21		103. 11. 35	104. 38. 22	106. 4. 53	107. 31. 8
22		114. 38. 36	116. 3. 22	117. 27. 57	118. 32. 16
20	Regulus.	62. 12. 17	63. 48. 34	65. 24. 31	67. 0. 8
21		74. 53. 41	76. 27. 31	78. 1. 6	79. 34. 25
22		87. 17. 25			
22	Spica $\alpha$	33. 28. 24	34. 59. 2	36. 29. 34	37. 59. 59
23		45. 30. 32	47. 0. 19	48. 29. 59	49. 59. 34
24		57. 26. 4	58. 55. 7	60. 24. 4	61. 52. 59
25		69. 16. 33	70. 45. 6	72. 13. 38	73. 42. 6
26		81. 4. 2	82. 32. 21	84. 0. 40	85. 28. 59
27	Antares.	46. 56. 21	48. 24. 34	49. 52. 51	51. 21. 9
28		58. 43. 26	60. 12. 2	61. 40. 43	63. 9. 27
29		70. 34. 0	72. 3. 8	73. 32. 20	75. 1. 37
30		82. 29. 22	83. 59. 12	85. 29. 8	86. 59. 11
31		94. 31. 9	96. 1. 55	97. 32. 50	99. 3. 53
A. 1		106. 41. 19			

XI.

J. U L Y 1779.

[83]

Distances of  $\gamma$ 's Center from  $\odot$ , and from Stars west of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1		67. 32. 13	69. 0. 54	70. 29. 39	71. 58. 29
2	Antares.	79. 23. 52	80. 53. 15	82. 22. 44	83. 52. 21
3		91. 22. 23	92. 52. 50	94. 23. 27	95. 54. 15
4		103. 31. 9			
4	$\alpha$ Aquila.	60. 38. 56	61. 51. 13	63. 4. 6	64. 17. 42
5		70. 34. 58	71. 52. 6	73. 9. 45	74. 27. 55
6		81. 5. 57	82. 26. 54	83. 48. 13	85. 9. 57
7		92. 4. 7			
7	Fomalhaut.	59. 17. 20	60. 52. 14	62. 27. 43	64. 3. 44
8		72. 11. 45	73. 50. 53	75. 30. 29	77. 10. 34
9		85. 38. 4			
9	Arietis.	24. 37. 5	26. 8. 21	27. 41. 29	29. 16. 24
10		37. 33. 0	39. 15. 43	40. 59. 17	42. 43. 42
11		51. 36. 3	53. 24. 14	55. 12. 48	57. 1. 47
16	The Sun.	47. 7. 20	48. 47. 52	50. 27. 59	52. 7. 44
17		60. 20. 11	61. 57. 23	63. 34. 10	65. 10. 32
18		73. 6. 1	74. 39. 52	76. 13. 19	77. 46. 21
19		85. 25. 37	86. 56. 20	88. 26. 41	89. 56. 41
20		97. 21. 29	98. 49. 28	100. 17. 8	101. 44. 31
21		108. 57. 8	110. 22. 52	111. 48. 21	113. 13. 36
22		120. 16. 25			
21	Regulus.	68. 35. 26	70. 10. 26	71. 45. 9	73. 19. 34
22		81. 7. 28	82. 40. 17	84. 12. 53	85. 45. 15
22	Spica $\alpha$	39. 30. 18	41. 0. 31	42. 30. 37	44. 0. 37
23		51. 29. 3	52. 58. 26	54. 27. 44	55. 56. 57
24		63. 21. 49	64. 50. 35	66. 19. 17	67. 47. 57
25		75. 10. 33	76. 38. 57	78. 7. 20	79. 35. 42
26		86. 57. 18			
26	Antares.	43. 3. 51	42. 31. 55	44. 0. 1	45. 28. 10
27		52. 49. 31	54. 17. 55	55. 46. 22	57. 14. 53
28		64. 38. 14	66. 7. 5	67. 35. 59	69. 4. 57
29		76. 30. 59	78. 0. 26	79. 29. 59	80. 59. 38
30		88. 29. 20	89. 59. 36	91. 30. 0	93. 0. 31
31		100. 35. 4	102. 6. 24	103. 37. 53	105. 9. 31

[84]

JULY 1779.

XII.

Configurations of the SATELLITES of JUPITER  
at 10 o' Clock in the Evening.

1				2 3 1	○			
2		4		1	○	2 3		
3		4			○	1 2 3		
4	4			2 1	○		3	
5	4			2	○	3 1		
6	4		3	1	○		2	
7		4 3			○	2 1		
8			4 2 3	1	○			
9	01			4	○	2 3		
10					○	1 4 3		
11				2 1	○		3 4	
12				2	○	3 1		4
13			3	1	○		2	4
14		3			○	2 1		4
15			2 3	1	○			4
16	02				○	1 3		4
17					○	1 4 2 3		
18				1 2 4	○		3	
19		4		2	○	1 3		
20		4		3 1	○		2	
21		4	3		○	2 1		
22		4		3 2	○			
23	03	4			○	1 2		
24		4			○	1 2 3		
25				4	○	2 1		3
26	04			2	○	1 3		
27				1 3	○	2 4		
28		3			○	2 1		4
29		3 2	1		○			4
30				2 3	○	1		4
31				1	○	2 3		4



I. AUGUST 1779. [85]

Days of the Month.	Days of the Week.	Sundays, Holidays, &c.	Phases of the Moon.	
			D.H.M.	
			Last Quarter —	4. 19. 29
			New Moon —	11. 10. 51
			First Quarter —	18. 10. 0
			Full Moon —	26. 14. 5
1	Su.	9th Sunday after Trinity.	D. Other Phenomena.	
2	M.	[Lammas-Day.		
3	Tu.			
4	W.			
5	Th.			
6	F.	Transfig. of our Lord.		
7	Sa.	Name of Jesus.		
8	Su.	10th Sunday after Trinity.	8. ☾ II 15 <sup>h</sup> . 51'. 10. ☾ ☿ 11 <sup>h</sup> . 54'. 11. ☾ ♀ 20 <sup>h</sup> . 6'. 14. ☾ ☿ 5 <sup>h</sup> . 51'. 16. ☾ ♀ 12 <sup>h</sup> . 20'. 18. ☾ ☿ 18 <sup>h</sup> . 36'. ☾ ♀ ☿ 2 <sup>h</sup> . 49'. ☾ ♀ ☿ 0 <sup>h</sup> . 39'. 20. ☾ ☿ Ophiuchi 6 <sup>h</sup> . 39'. ☾ ☿ Ophiuchi 8 <sup>h</sup> . 31'. 21. ☾ ☿ ☿ 12 <sup>h</sup> . 46'. 22. ☾ ☿ ☿ 1 <sup>h</sup> . 4'. ☿ enters ♀ at 21 <sup>h</sup> . 13'. 25. ☾ ☿ ☿ 5 <sup>h</sup> . 29'.	
9	M.			
10	Tu.	St. Lawrence.		
11	W.	Pr. of Brunswick born.		
12	Th.	Pr. of Wales born 1762.		
13	F.			
14	Sa.			
15	Su.	11th Sunday after Trinity.		
16	M.	Prince Frederick born.		
17	Tu.			
18	W.			
19	Th.			
20	F.			
21	Sa.	Pr. William Henry born.		
22	Su.	12th Sunday after Trinity.		
23	M.			
24	Tu.	St. Bartholomew.		
25	W.			
26	Th.			
27	F.			
28	Sa.	St. Augustine.		
29	Su.	13th Sunday after Trinity.		
30	M.	[St. John Bap. beheaded.		
31	Tu.			

Days of the Month.	Days of the Week.	Sun's Longitude.	Sun's Right Asc. in Time.	Sun's Declin. North.	Equat. of Time. Add.	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
1	Su.	4. 8. 58. 0	8.45.37, 1	18. 2. 17	5. 52, 3	3, 7
2	M.	4. 9. 55. 26	8.49.29, 8	17. 47. 0	5. 48, 6	4, 3
3	Tu.	4. 10. 52. 54	8.53.22, 1	17. 31. 26	5. 44, 3	5, 0
4	W.	4. 11. 50. 23	8.57.13, 6	17. 15. 35	5. 39, 3	5, 5
5	Th.	4. 12. 47. 54	9. 1. 4, 7	16. 59. 27	5. 33, 8	6, 1
6	F.	4. 13. 45. 26	9. 4. 55, 2	16. 43. 2	5. 27, 7	6, 7
7	Sa.	4. 14. 42. 59	9. 8. 45, 0	16. 26. 21	5. 21, 0	7, 1
8	Su.	4. 15. 40. 34	9.12.34, 4	16. 9. 24	5. 13, 9	7, 8
9	M.	4. 16. 38. 10	9.16.23, 2	15. 52. 11	5. 6, 1	8, 3
10	Tu.	4. 17. 35. 48	9.20.11, 4	15. 34. 43	4. 57, 8	8, 8
11	W.	4. 18. 33. 27	9.23.59, 1	15. 17. 0	4. 49, 0	9, 6
12	Th.	4. 19. 31. 7	9.27.46, 1	14. 59. 2	4. 39, 4	10, 0
13	F.	4. 20. 28. 48	9.31.32, 6	14. 40. 50	4. 29, 4	10, 5
14	Sa.	4. 21. 26. 31	9.35.18, 6	14. 22. 23	4. 18, 9	11, 1
15	Su.	4. 22. 24. 15	9.39. 4, 0	14. 3. 43	4. 7, 8	11, 7
16	M.	4. 23. 22. 0	9.42.48, 9	13. 44. 49	3. 56, 1	12, 2
17	Tu.	4. 24. 19. 46	9.46.33, 2	13. 25. 42	3. 43, 9	12, 7
18	W.	4. 25. 17. 33	9.50.17, 0	13. 6. 23	3. 31, 2	13, 2
19	Th.	4. 26. 15. 21	9.54. 0, 3	12. 46. 51	3. 18, 0	13, 9
20	F.	4. 27. 13. 10	9.57.43, 0	12. 27. 8	3. 4, 1	14, 2
21	Sa.	4. 28. 11. 0	10. 1. 25, 3	12. 7. 12	2. 49, 9	14, 6
22	Su.	4. 29. 8. 52	10. 5. 7, 2	11. 47. 5	2. 35, 3	15, 2
23	M.	5. 0. 6. 44	10. 8. 48, 5	11. 26. 47	2. 20, 1	15, 6
24	Tu.	5. 1. 4. 38	10.12.29, 4	11. 6. 18	2. 4, 5	16, 0
25	W.	5. 2. 2. 34	10.16. 9, 9	10. 45. 38	1. 48, 5	16, 6
26	Th.	5. 3. 0. 31	10.19.49, 9	10. 24. 48	1. 31, 9	16, 8
27	F.	5. 3. 58. 29	10.23.29, 5	10. 3. 49	1. 15, 1	17, 2
28	Sa.	5. 4. 56. 29	10.27. 8, 8	9. 42. 40	0. 57, 9	17, 6
29	Su.	5. 5. 54. 31	10.30.47, 8	9. 21. 21	0. 40, 3	18, 0
30	M.	5. 6. 52. 34	10.34.26, 3	8. 59. 53	0. 22, 3	18, 2
31	Tu.	5. 7. 50. 39	10.38. 4, 6	8. 38. 17	0. 4, 1	

# III. AUGUST 1779. [87]

Days.	Semidia- meter of the Sun.	Time of D <sup>o</sup> passing the Meridian.	Hourly Motion of the Sun.	Logarithm of the Sun's Distance.	Place of the Moon's Node.
	M. S.	M. S.	M. S.		S. D. M.
1	15. 49, 0	1. 6, 5	2. 23, 6	0. 006249	2. 8. 9
7	15. 49, 9	1. 6, 0	2. 23, 9	0. 005870	2. 7. 50
13	15. 50, 9	1. 5, 5	2. 24, 3	0. 005416	2. 7. 31
19	15. 52, 1	1. 5, 1	2. 24, 6	0. 004882	2. 7. 12
25	15. 53, 3	1. 4, 7	2. 24, 9	0. 004295	2. 6. 53

## ECLIPSES of the SATELLITES of JUPITER.

I. Satellite. Emerfions.		II. Satellite. Emerfions.		III. Satellite.	
Days	H. M. S.	Days	H. M. S.	Days	H. M. S.
1	12. 25. 33	1	13. 6. 55	3	6. 35. 30 I.
3	6. 54. 14	5	2. 25. 40	3	9* 11. 27 E.
5	1. 22. 57	8	15. 44. 34	10	10. 35. 17 I.
6	19. 51. 43	12	5. 3. 36	10	13. 10. 8 E.
8	14. 20. 26	15	18. 22. 40	17	17. 9. 11 E.
10	8* 49. 17	19	7* 41. 54	24	21. 8. 38 E.
12	3. 18. 9	22	21. 1. 17	IV. Satellite.	
13	21. 46. 56	26	10. 20. 30		
15	16. 15. 50			4	3. 24. 2 I.
17	10. 44. 47			4	5. 36. 58 E.
19	5. 13. 42			20	21. 28. 36 I.
20	23. 42. 38			20	23. 31. 9 E.
22	18. 11. 36				
24	12. 40. 33				
26	7. 9. 36				



Days of the Month.	Days of the Week.	Sun's Longitude.	Sun's Right Asc. in Time.	Sun's Declin. North.	Equat. of Time. Add.	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
1	Su.	4. 8. 58. 0	8.45.37,1	18. 2. 17	5. 52,3	3,7
2	M.	4. 9. 55. 26	8.49.29,8	17. 47. 0	5. 48,6	4,3
3	Tu.	4. 10. 52. 54	8.53.22,1	17. 31. 26	5. 44,3	5,0
4	W.	4. 11. 50. 23	8.57.13,6	17. 15. 35	5. 39,3	5,5
5	Th.	4. 12. 47. 54	9. 1. 4,7	16. 59. 27	5. 33,8	6,1
6	F.	4. 13. 45. 26	9. 4.55,2	16. 43. 2	5. 27,7	6,7
7	Sa.	4. 14. 42. 59	9. 8.45,0	16. 26. 21	5. 21,0	7,1
8	Su.	4. 15. 40. 34	9.12.34,4	16. 9. 24	5. 13,9	7,8
9	M.	4. 16. 38. 10	9.16.23,2	15. 52. 11	5. 6,1	8,3
10	Tu.	4. 17. 35. 48	9.20.11,4	15. 34. 43	4. 57,8	8,8
11	W.	4. 18. 33. 27	9.23.59,1	15. 17. 0	4. 49,0	9,6
12	Th.	4. 19. 31. 7	9.27.46,1	14. 59. 2	4. 39,4	10,0
13	F.	4. 20. 28. 48	9.31.32,6	14. 40. 50	4. 29,4	10,5
14	Sa.	4. 21. 26. 31	9.35.18,6	14. 22. 23	4. 18,9	11,1
15	Su.	4. 22. 24. 15	9.39.4,0	14. 3. 43	4. 7,8	11,7
16	M.	4. 23. 22. 0	9.42.48,9	13. 44. 49	3. 56,1	12,2
17	Tu.	4. 24. 19. 46	9.46.33,2	13. 25. 42	3. 43,9	12,7
18	W.	4. 25. 17. 33	9.50.17,0	13. 6. 23	3. 31,2	13,2
19	Th.	4. 26. 15. 21	9.54. 0,3	12. 46. 51	3. 18,0	13,9
20	F.	4. 27. 13. 10	9.57.43,0	12. 27. 8	3. 4,1	14,2
21	Sa.	4. 28. 11. 0	10. 1.25,3	12. 7. 12	2. 49,9	14,6
22	Su.	4. 29. 8. 52	10. 5. 7,2	11. 47. 5	2. 35,3	15,2
23	M.	5. 0. 6. 44	10. 8.48,5	11. 26. 47	2. 20,1	15,6
24	Tu.	5. 1. 4. 38	10.12.29,4	11. 6. 18	2. 4,5	16,0
25	W.	5. 2. 2. 34	10.16. 9,9	10. 45. 38	1. 48,5	16,6
26	Th.	5. 3. 0. 31	10.19.49,9	10. 24. 48	1. 31,9	16,8
27	F.	5. 3. 58. 29	10.23.29,5	10. 3. 49	1. 15,1	17,2
28	Sa.	5. 4. 56. 29	10.27. 8,8	9. 42. 40	0. 57,9	17,6
29	Su.	5. 5. 54. 31	10.30.47,8	9. 21. 21	0. 40,3	18,0
30	M.	5. 6. 52. 34	10.34.26,3	8. 59. 53	0. 22,3	18,2
31	Tu.	5. 7. 50. 39	10.38. 4,6	8. 38. 17	0. 4,1	

# III. AUGUST 1779. [87]

Days.	Semidia- meter of the Sun.	Time of D <sup>o</sup> passing the Meridian.	Hourly Motion of the Sun.	Logarithm of the Sun's Distance.	Place of the Moon's Node.
	M. S.	M. S.	M. S.		S. D. M.
1	15. 49, 0	1. 6, 5	2. 23, 6	0. 006249	2. 8. 9
7	15. 49, 9	1. 6, 0	2. 23, 9	0. 005870	2. 7. 50
13	15. 50, 9	1. 5, 5	2. 24, 3	0. 005416	2. 7. 31
19	15. 52, 1	1. 5, 1	2. 24, 6	0. 004882	2. 7. 12
25	15. 53, 3	1. 4, 7	2. 24, 9	0. 004295	2. 6. 53

## ECLIPSES of the SATELLITES of JUPITER.

I. Satellite. Emerfions.		II. Satellite. Emerfions.		III. Satellite.	
Days	H. M. S.	Days	H. M. S.	Days	H. M. S.
1	12. 25. 33	1	13. 6. 55	3	6. 35. 30 I.
3	6. 54. 14	5	2. 25. 40	3	9* 11. 27 E.
5	1. 22. 57	8	15. 44. 34	10	10. 35. 17 I.
6	19. 51. 43	12	5. 3. 36	10	13. 10. 8 E.
8	14. 20. 26	15	18. 22. 40	17	17. 9. 11 E.
10	8* 49. 17	19	7* 41. 54	24	21. 8. 38 E.
12	3. 18. 9	22	21. 1. 17	IV. Satellite.	
13	21. 46. 56	26	10. 20. 30		
15	16. 15. 50			4	3. 24. 2 I.
17	10. 44. 47			4	5. 36. 58 E.
19	5. 13. 42			20	21. 28. 36 I.
20	23. 42. 38			20	23. 31. 9 E.
22	18. 11. 36				
24	12. 40. 33				
26	7. 9. 36				

Days.	Heliocen- tric Lon- gitude.	Heliocen- tric Lati- tude.	Geocen- tric Lon- gitude.	Geocen- tric La- titude.	Declina- tion.	Passage over Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.

MERCURY. Greatest Elong. 18<sup>d</sup>.

1	6. 29. 48	1. 57 N	5. 0. 34	0. 44 N	11. 57 N	1. 26
4	7. 9. 2	0. 50 N	5. 5. 6	0. 20	9. 58	1. 30
7	7. 17. 49	0. 14 S	5. 9. 22	0. 6 S	7. 58	1. 35
10	7. 26. 20	1. 16	5. 13. 23	0. 34	6. 1	1. 38
13	8. 4. 39	2. 15	5. 17. 7	1. 3	4. 9	1. 40
16	8. 12. 54	3. 10	5. 20. 31	1. 32	2. 20	1. 40
19	8. 21. 8	4. 3	5. 23. 35	2. 3	0. 40 N	1. 38
22	8. 29. 29	4. 50	5. 26. 13	2. 33	0. 50 S	1. 37
25	9. 8. 1	5. 32	5. 28. 22	3. 2	2. 8	1. 33
28	9. 16. 50	6. 7	5. 29. 55	3. 29	3. 10	1. 27
31	9. 26. 4	6. 35	6. 0. 45	3. 51	3. 50	1. 18

VENUS.

1	2. 17. 8	0. 9 N	3. 17. 46	0. 4 N	22. 21 N	22. 32
7	2. 26. 50	0. 43	3. 25. 5	0. 19	21. 27	22. 41
13	3. 6. 32	1. 16	4. 2. 25	0. 34	20. 11	22. 49
19	3. 16. 16	1. 46	4. 9. 48	0. 47	18. 35	22. 57
25	3. 26. 0	2. 14	4. 17. 10	0. 58	16. 38	23. 4

MARS.

1	9. 6. 3	1. 22 S	7. 22. 41	2. 27 S	20. 50 S	6. 32
7	9. 9. 36	1. 27	7. 25. 25	2. 27	21. 33	6. 20
13	9. 13. 10	1. 31	7. 28. 22	2. 27	22. 14	6. 10
19	9. 16. 46	1. 35	8. 1. 30	2. 27	22. 55	6. 2
25	9. 20. 24	1. 38	8. 4. 48	2. 28	23. 31	5. 53

JUPITER.

1	6. 3. 9	1. 19 N	5. 25. 24	1. 11 N	2. 56 N	2. 59
7	6. 3. 36	1. 19	5. 26. 28	1. 10	2. 28	2. 40
13	6. 4. 2	1. 19	5. 27. 36	1. 10	2. 1	2. 22
19	6. 4. 31	1. 19	5. 28. 47	1. 9	1. 32	2. 3
25	6. 4. 58	1. 19	5. 29. 59	1. 8	1. 3	1. 45

SATURN.  $\square$  13<sup>d</sup>. 4<sup>h</sup> $\frac{1}{2}$ .

1	7. 26. 6	2. 4 N	7. 20. 23	2. 7 N	15. 49 S	6. 28
7	7. 26. 17	2. 3	7. 20. 29	2. 6	15. 54	6. 6
13	7. 26. 28	2. 3	7. 20. 39	2. 5	15. 57	5. 44
19	7. 26. 39	2. 3	7. 20. 52	2. 3	16. 1	5. 22
25	7. 26. 50	2. 3	7. 21. 8	2. 1	16. 7	5. 0



V. AUGUST 1779. [89]

Days of the Month.	Days of the Week.	Moon's Longitude at Noon.	Moon's Longitude at Midnight.	Moon's Latitude at Noon.	Moon's Latitude at Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
1	Su.	11. 23. 54. 0	0. 0. 5. 36	4. 54. 42 S	4. 44. 47 S
2	M.	0. 6. 20. 9	0. 12. 37. 57	4. 31. 23	4. 14. 34
3	Tu.	0. 18. 59. 25	0. 25. 24. 52	3. 54. 27	3. 31. 8
4	W.	1. 1. 54. 42	1. 8. 29. 14	3. 4. 52	2. 35. 49
5	Th.	1. 15. 8. 56	1. 21. 54. 3	2. 4. 16	1. 30. 33
6	F.	1. 28. 44. 56	2. 5. 41. 44	0. 55. 4 S	0. 18. 16 S
7	Sa.	2. 12. 44. 36	2. 19. 53. 29	0. 19. 19 N	0. 57. 6 N
8	Su.	2. 27. 8. 19	3. 4. 28. 37	1. 34. 27	2. 10. 41
9	M.	3. 11. 53. 53	3. 19. 23. 29	2. 45. 4	3. 16. 53
10	Tu.	3. 26. 56. 21	4. 4. 31. 22	3. 45. 27	4. 10. 10
11	W.	4. 12. 7. 20	4. 19. 42. 50	4. 30. 28	4. 45. 56
12	Th.	4. 27. 16. 30	5. 4. 47. 34	4. 56. 20	5. 1. 32
13	F.	5. 12. 13. 11	5. 19. 34. 15	5. 1. 32	4. 56. 33
14	Sa.	5. 26. 48. 34	6. 3. 56. 17	4. 46. 49	4. 32. 44
15	Su.	6. 10. 56. 42	6. 17. 49. 43	4. 14. 44	3. 53. 19
16	M.	6. 24. 35. 18	7. 1. 13. 43	3. 28. 59	3. 2. 10
17	Tu.	7. 7. 45. 15	7. 14. 10. 22	2. 33. 23	2. 3. 7
18	W.	7. 20. 29. 35	7. 26. 43. 32	1. 31. 45	0. 59. 44 N
19	Th.	8. 2. 52. 50	8. 8. 58. 7	0. 27. 23 N	0. 4. 55 S
20	F.	8. 15. 0. 4	8. 20. 59. 22	0. 36. 50 S	1. 8. 7
21	Sa.	8. 26. 56. 34	9. 2. 52. 17	1. 38. 26	2. 7. 30
22	Su.	9. 8. 47. 7	9. 14. 41. 34	2. 35. 6	3. 0. 58
23	M.	9. 20. 36. 7	9. 26. 31. 9	3. 24. 51	3. 46. 31
24	Tu.	10. 2. 27. 9	10. 8. 24. 20	4. 5. 45	4. 22. 20
25	W.	10. 14. 22. 53	10. 20. 23. 34	4. 36. 3	4. 46. 50
26	Th.	10. 26. 25. 11	11. 2. 29. 15	4. 54. 25	4. 58. 41
27	F.	11. 8. 35. 28	11. 14. 43. 49	4. 59. 34	4. 56. 59
28	Sa.	11. 20. 54. 25	11. 27. 7. 24	4. 50. 55	4. 41. 20
29	Su.	0. 3. 22. 47	0. 9. 40. 41	4. 28. 17	4. 11. 54
30	M.	0. 16. 1. 16	0. 22. 24. 36	3. 52. 15	3. 29. 33
31	Tu.	0. 28. 50. 57	1. 5. 20. 26	3. 3. 51	2. 35. 31

[90]		AUGUST 1779.				VI.	
Days of the Month.	Days of the Week.	D's Age.	D's Pass- age over Merid.	D's Right Ascen. at Noon.	D's Right Asc. at Midn.	D's De- clination at Noon.	D's De- clination at Midn.
			H. M.	D. M.	D. M.	D. M.	D. M.
1	Sa.	20	15. 26	356. 22	1. 58	6. 56 S	4. 19 S
2	M.	21	16. 9	7. 36	13. 16	1. 38 S	1. 5 N
3	Tu.	22	16. 53	19. 0	24. 50	3. 50 N	6. 34
4	W.	23	17. 40	30. 49	36. 57	9. 16	11. 53
5	Th.	24	18. 31	43. 18	49. 53	14. 25	16. 48
6	F.	25	19. 26	56. 44	63. 51	19. 1	20. 59
7	Sa.	26	20. 26	71. 15	78. 55	22. 40	24. 2
8	Su.	27	21. 30	86. 51	94. 58	25. 1	25. 34
9	M.	28	22. 35	103. 13	111. 31	25. 41	25. 19
10	Tu.	29	23. 38	119. 47	127. 57	24. 29	23. 12
11	W.	1	♂	135. 57	143. 42	21. 30	19. 26
12	Th.	2	0. 40	151. 15	158. 32	17. 4	14. 26
13	F.	3	1. 35	165. 33	172. 22	11. 38	8. 41
14	Sa.	4	2. 26	178. 59	185. 26	5. 39 N	2. 36 N
15	Su.	5	3. 14	191. 43	197. 56	0. 26 S	3. 24 S
16	M.	6	4. 1	204. 3	210. 9	6. 18	9. 4
17	Tu.	7	4. 47	216. 14	222. 20	11. 42	14. 9
18	W.	8	5. 34	228. 28	234. 40	16. 25	18. 29
19	Th.	9	6. 22	240. 54	247. 15	20. 19	21. 54
20	F.	10	7. 11	253. 39	260. 6	23. 14	24. 18
21	Sa.	11	8. 1	266. 38	273. 12	25. 4	25. 34
22	Su.	12	8. 52	279. 45	286. 19	25. 46	25. 40
23	M.	13	9. 42	292. 52	299. 20	25. 16	24. 35
24	Tu.	14	10. 31	305. 44	312. 4	23. 38	22. 24
25	W.	15	11. 18	318. 17	324. 24	20. 56	19. 14
26	Th.	16	12. 4	330. 24	336. 19	17. 20	15. 14
27	F.	17	12. 48	342. 8	347. 53	13. 0	10. 35
28	Sa.	18	13. 30	353. 35	359. 14	8. 4	5. 27
29	Su.	19	14. 14	4. 53	10. 33	2. 45 S	0. 1 S
30	M.	20	14. 57	16. 15	22. 1	2. 45 N	5. 29 N
31	Tu.	21	15. 42	27. 54	33. 55	8. 12	10. 52



VII.		AUGUST 1779.				[91]	
Days of the Month.	Days of the Week.	Semidr. $\Delta$ at Noon.	Semidr. $\Delta$ at Mid-night.	Hor. Par. $\Delta$ at Noon.	Hor. Par. $\Delta$ at Midnight.	Proport. Lo- gar. at Noon.	Proport. Lo- gar. at Midn.
		M. S.	M. S.	M. S.	M. S.		
1	Su.	15. 4	15. 8	55. 17	55. 32	5127	5107
2	M.	15. 13	15. 17	55. 48	56. 7	5086	5062
3	Tu.	15. 23	15. 28	56. 26	56. 47	5037	5010
4	W.	15. 34	15. 41	57. 9	57. 32	4983	4953
5	Th.	15. 47	15. 54	57. 57	58. 22	4922	4891
6	F.	16. 1	16. 8	58. 47	59. 12	4860	4830
7	Sa.	16. 15	16. 21	59. 36	60. 0	4800	4771
8	Su.	16. 27	16. 32	60. 20	60. 40	4747	4723
9	M.	16. 36	16. 39	60. 55	61. 7	4705	4691
10	Tu.	16. 41	16. 42	61. 15	61. 18	4682	4678
11	W.	16. 42	16. 40	61. 17	61. 11	4679	4686
12	Th.	16. 37	16. 33	61. 0	60. 46	4699	4716
13	F.	16. 28	16. 22	60. 27	60. 5	4739	4765
14	Sa.	16. 16	16. 8	59. 41	59. 14	4794	4827
15	Su.	16. 1	15. 53	58. 47	58. 18	4860	4896
16	M.	15. 45	15. 38	57. 50	57. 22	4931	4967
17	Tu.	15. 30	15. 23	56. 55	56. 29	5000	5033
18	W.	15. 17	15. 11	56. 5	55. 43	5064	5093
19	Th.	15. 6	15. 1	55. 24	55. 7	5118	5140
20	F.	14. 57	14. 54	54. 52	54. 34	5159	5183
21	Sa.	14. 51	14. 49	54. 29	54. 21	5190	5201
22	Su.	14. 47	14. 46	54. 15	54. 12	5209	5213
23	M.	14. 45	14. 46	54. 10	54. 11	5215	5214
24	Tu.	14. 46	14. 47	54. 12	54. 16	5213	5207
25	W.	14. 48	14. 50	54. 21	54. 27	5201	5193
26	Th.	14. 52	14. 55	54. 35	54. 43	5182	5171
27	F.	14. 57	15. 0	54. 54	55. 4	5157	5144
28	Sa.	15. 4	15. 7	55. 17	55. 29	5127	5111
29	Su.	15. 11	15. 15	55. 42	55. 56	5094	5076
30	M.	15. 18	15. 23	56. 11	56. 27	5056	5036
31	Tu.	15. 27	15. 32	56. 44	57. 1	5014	4992



Distances of J's Center from ☉, and from Stars east of her.

Days	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Aldebaran.	72. 27. 28	70. 55. 35	69. 23. 30	67. 51. 16
2		60. 7. 13	58. 33. 50	57. 0. 14	55. 26. 25
3		47. 34. 2	45. 58. 53	44. 23. 30	42. 47. 52
4		34. 46. 19	33. 9. 19	31. 32. 9	29. 54. 49
5		21. 46. 21			
2	The Sun.	123. 28. 10	122. 1. 49	120. 35. 13	119. 8. 22
3		111. 50. 17	110. 21. 52	108. 53. 11	107. 24. 12
4		99. 54. 49	98. 24. 1	96. 52. 54	95. 21. 27
5		87. 39. 2	86. 5. 31	84. 31. 38	82. 57. 24
6		75. 0. 37	73. 24. 8	71. 47. 17	70. 10. 4
7		61. 58. 25	60. 18. 59	58. 39. 13	56. 59. 6
8		48. 33. 24	46. 51. 20	45. 9. 1	43. 26. 26
13	Antares.	84. 54. 8	83. 4. 9	81. 14. 32	79. 25. 18
14		70. 24. 52	68. 38. 0	66. 51. 35	65. 5. 35
15		56. 22. 18	54. 39. 1	52. 56. 11	51. 13. 50
16		42. 49. 2	41. 9. 29	39. 30. 23	37. 51. 46
17	α Aquilæ.	80. 49. 27	79. 28. 43	78. 8. 29	76. 48. 43
18		70. 17. 39	69. 1. 6	67. 45. 8	66. 29. 48
19		60. 22. 53			
19	Fomalhaut.	88. 11. 3	86. 42. 38	85. 14. 27	83. 46. 31
20		76. 30. 13	75. 3. 35	73. 37. 9	72. 10. 57
21		65. 3. 3			
21	α Pegasi.	84. 23. 57	83. 2. 39	81. 41. 31	80. 20. 30
22		73. 37. 36	72. 17. 29	70. 57. 31	69. 37. 44
23		63. 1. 41	61. 43. 7	60. 24. 49	59. 6. 48
24		52. 41. 13			
24	α Arietis.	92. 47. 58	91. 21. 7	89. 54. 9	88. 27. 9
25		81. 11. 5	79. 43. 42	78. 16. 13	76. 48. 41
26		69. 29. 48	68. 1. 49	66. 33. 47	65. 5. 41
27		57. 44. 20			
27	Aldebaran.	87. 39. 15	86. 8. 7	84. 36. 52	83. 5. 29
28		75. 26. 23	73. 54. 7	72. 21. 42	70. 49. 8
29		63. 4. 4	61. 30. 35	59. 56. 56	58. 23. 8
30		50. 31. 43	48. 56. 58	47. 22. 3	45. 46. 59
31		37. 49. 20	36. 13. 23	34. 37. 20	33. 1. 12
S. 1		24. 59. 26			

## IX. AUGUST 1779. [93]

Distances of J's Center from ☉, and from Stars east of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Aldebaran.	66. 18. 49	64. 46. 13	63. 13. 25	61. 40. 25
2		53. 52. 24	52. 18. 9	50. 43. 40	49. 8. 58
3		41. 12. 1	39. 35. 55	37. 59. 37	36. 23. 4
4		28. 17. 19	26. 39. 42	25. 2. 0	23. 24. 13
2	The Sun.	117. 41. 16	116. 13. 55	114. 46. 18	113. 18. 25
3		105. 54. 56	104. 25. 20	102. 55. 30	101. 25. 19
4		93. 49. 40	92. 17. 32	90. 45. 3	89. 12. 13
5		81. 22. 48	79. 47. 49	78. 12. 27	76. 36. 43
6		68. 32. 29	66. 54. 31	65. 16. 11	63. 37. 29
7		55. 18. 37	53. 37. 47	51. 56. 38	50. 15. 11
8		41. 43. 33			
13	Antares.	77. 36. 25	75. 47. 55	73. 59. 50	72. 12. 9
14		63. 20. 2	61. 34. 55	59. 50. 16	58. 6. 3
15		49. 31. 56	47. 50. 30	46. 9. 33	44. 29. 3
16		36. 13. 37			
16	α Aquilæ.	86. 16. 45	84. 54. 17	83. 32. 15	82. 10. 38
17		75. 29. 27	74. 10. 41	72. 52. 28	71. 34. 48
18		65. 15. 3	64. 1. 0	62. 47. 36	61. 34. 54
19	Fomalhaut.	82. 18. 48	80. 51. 19	79. 24. 4	77. 57. 2
20		70. 44. 57	69. 19. 10	67. 53. 35	66. 28. 12
21	α Pegasi.	78. 59. 38	77. 38. 54	76. 18. 20	74. 57. 54
22		68. 18. 8	66. 58. 42	65. 39. 29	64. 20. 29
23		57. 49. 2	56. 31. 35	55. 14. 27	53. 57. 39
24	α Arietis.	87. 0. 4	85. 32. 56	84. 5. 44	82. 38. 26
25		75. 21. 4	73. 53. 22	72. 25. 35	70. 57. 44
26		63. 37. 31	62. 9. 18	60. 41. 1	59. 12. 43
27	Aldebaran.	81. 33. 57	80. 2. 16	78. 30. 20	76. 39. 28
28		69. 16. 25	67. 43. 33	66. 10. 32	64. 37. 23
29		56. 49. 11	55. 15. 3	53. 40. 46	52. 6. 19
30		44. 11. 46	42. 36. 22	41. 0. 49	39. 25. 9
31		31. 24. 58	29. 48. 38	28. 12. 18	26. 35. 54

[94] AUGUST 1779. X.

Distances of  $\gamma$ 's Center from  $\odot$ , and from Stars west of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	$\alpha$ Aquilæ.	63. 2. 3	64. 15. 16	65. 29. 3	66. 43. 23
2		73. 2. 39	74. 19. 53	75. 37. 31	76. 55. 33
3		83. 31. 20	84. 51. 29	86. 11. 56	87. 32. 40
4		94. 20. 19			
4	Fomal- haut.	62. 2. 43	63. 36. 6	65. 9. 56	66. 44. 14
5		74. 42. 8	76. 18. 57	77. 56. 10	79. 33. 47
6		87. 47. 49			
6	$\alpha$ Arietis.	26. 24. 5	27. 55. 8	29. 27. 42	31. 1. 43
7		39. 9. 57	40. 50. 25	42. 31. 40	44. 13. 41
8		52. 53. 40	54. 39. 21	56. 25. 31	58. 12. 9
9		67. 11. 32	69. 0. 30	70. 49. 46	72. 39. 17
10		81. 50. 15			
15	The Sun.	48. 40. 47	50. 16. 45	51. 52. 18	53. 27. 26
16		61. 16. 48	62. 49. 25	64. 21. 38	65. 53. 27
17		73. 26. 29	74. 55. 56	76. 25. 2	77. 53. 46
18		85. 12. 8	86. 38. 49	88. 5. 12	89. 31. 17
19		96. 37. 28	98. 1. 55	99. 26. 8	100. 50. 7
20		107. 46. 50	109. 9. 37	110. 32. 14	111. 54. 42
21		118. 44. 47			
19	Spica $\mu$	42. 11. 11	43. 42. 12	45. 13. 2	46. 43. 42
20		54. 14. 32	55. 44. 14	57. 13. 49	58. 43. 15
21		66. 8. 41	67. 37. 28	69. 6. 10	70. 34. 48
22		77. 57. 5			
22	Antares.	32. 5. 45	33. 33. 33	35. 1. 23	36. 29. 15
23		43. 49. 14	45. 17. 22	46. 45. 32	48. 13. 46
24		55. 35. 54	57. 4. 31	58. 33. 11	60. 1. 57
25		67. 27. 12	68. 56. 31	70. 25. 55	71. 55. 26
26		79. 24. 44	80. 54. 56	82. 25. 16	83. 55. 44
27		91. 29. 59	93. 1. 13	94. 32. 36	96. 4. 7
28		103. 43. 57			
28	$\alpha$ Aquilæ.	60. 37. 3	61. 49. 29	63. 2. 32	64. 16. 10
29		70. 32. 28	71. 49. 10	73. 6. 16	74. 23. 46
30		80. 56. 45			
30	Fomal- haut.	47. 12. 3	48. 40. 40	50. 9. 45	51. 39. 18
31		59. 13. 33	60. 45. 38	62. 18. 4	63. 50. 52
S. 1		71. 39. 47			



XI. A U G U S T 1779. [95]

Dittances of  $\gamma$ 's Center from  $\odot$ , and from Stars west of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	$\alpha$ Aquilæ.	67. 58. 15	69. 13. 38	70. 29. 30	71. 45. 50
2		78. 14. 0	79. 32. 49	80. 51. 59	82. 11. 29
3		88. 53. 42	90. 14. 59	91. 36. 31	92. 58. 18
4	Fomal- haut.	68. 18. 58	69. 54. 6	71. 29. 41	73. 5. 42
5		81. 11. 49	82. 50. 14	84. 29. 2	86. 8. 14
6	$\alpha$ Arietis.	32. 37. 5	34. 13. 43	35. 51. 26	37. 30. 9
7		45. 56. 25	47. 39. 50	49. 23. 51	51. 8. 28
8		59. 59. 15	61. 46. 46	63. 34. 39	65. 22. 55
9		74. 29. 5	76. 19. 8	78. 9. 20	79. 59. 42
14	The Sun.	42. 12. 53	43. 50. 28	45. 27. 38	47. 4. 24
15		55. 2. 10	56. 36. 27	58. 10. 19	59. 43. 46
16		67. 24. 51	68. 55. 50	70. 26. 26	71. 56. 39
17		79. 22. 8	80. 50. 8	82. 17. 48	83. 45. 8
18		90. 57. 4	92. 22. 33	93. 47. 47	95. 12. 47
19		102. 13. 52	103. 37. 24	105. 0. 44	106. 23. 53
20		113. 17. 0	114. 39. 8	116. 1. 9	117. 23. 2
18	Spica $\kappa$	36. 5. 13	37. 37. 0	39. 8. 35	40. 39. 58
19		48. 14. 12	49. 44. 31	51. 14. 41	52. 44. 42
20		60. 12. 34	61. 41. 45	63. 10. 50	64. 39. 49
21		72. 3. 21	73. 31. 51	75. 0. 18	76. 28. 42
22	Antares.	37. 57. 10	39. 25. 7	40. 53. 7	42. 21. 9
23		49. 42. 4	51. 10. 26	52. 38. 51	54. 7. 21
24		61. 30. 48	62. 59. 45	64. 28. 49	65. 57. 58
25		73. 25. 3	74. 54. 48	76. 24. 39	77. 54. 38
26		85. 26. 19	86. 57. 2	88. 27. 53	89. 58. 52
27		97. 35. 47	99. 7. 36	100. 39. 34	102. 11. 41
28		65. 30. 25	66. 45. 11	68. 0. 28	69. 16. 12
29	$\alpha$ Aquilæ	75. 41. 41	76. 59. 58	78. 18. 34	79. 37. 30
30	Fomal- haut.	53. 9. 18	54. 39. 45	56. 10. 35	57. 41. 52
31		65. 24. 3	66. 57. 31	68. 31. 18	70. 5. 24

Configurations of the SATELLITES of JUPITER at  
 $\frac{1}{4}$  past 8 o' Clock in the Evening.

1			☉ 2.1.	.3	4.
2		.2	☉ .1	3.	4.
3		1.3.	☉ .2	4.	
4	3.	4.	☉ .1	2.	
5	4. 3.	1 6 2	☉		
6	4.	.2.3	☉	1.	
7	4.	.1	☉	.3.2	
8	.4		☉ 1 6 2	.3	
9	.4	2.	.1	☉	3.
10	.4	1.	☉ .2	3.	
11	3.	.4	☉ .1	2.	
12	.3	1.2.	☉ .4		
at $\frac{1}{2}$ past 7 in the Evening.					
13		3 6 2.	☉	.1	.4
14		.1	☉	.3.2	.4
15			☉	1 6 2	.3 .4
16		2.	.1	☉	3.
17		.2	☉ 1.3.		.4
18		2.	☉ .1	2.	4.
19	3.	1.2.	☉		4.
20		.3.2	☉ .1	4.	
21		1 6 4	☉ .3	.2	
22	4.		☉	1.2.	.3
23	4.	2.	.1	☉	3.
24	4.		.2	☉ 1.2.	
25	.4	3.	.1	☉	.2

I. SEPTEMBER 1779. [97]

Days of the Month.	Days of the Week.	Sundays, Holidays, &c.	Phases of the Moon.
			D. H. M.
			Last Quarter — 3. 3. 49
			New Moon — 9. 18. 56
			First Quarter — 17. 2. 30
			Full Moon — 25. 4. 51
1	W.	Giles.	D. Other Phenomena.
2	Th.	London burnt 1666, O.S.	1. ♀ α Ω diff. Lat. 44'. <span style="float: right;">♂ □ + 1'</span>
3	F.		2. ♀ Stationary.
4	Sa.		♂ η η diff. Lat. 15'.
5	Su.	14th Sunday after Trinity.	4. ☾ 132 ♂ 3 <sup>h</sup> . 9'.
6	M.		5. ☾ ε II 0 <sup>h</sup> . 11'.
7	Tu.	Enurchus.	☾ κ II 22 <sup>h</sup> . 57'.
8	W.	Nativity of B. V. Mary.	6. ☾ γ ♂ 21 <sup>h</sup> . 37'.
9	Th.		8. ♄ 4ad. ♄ diff. Lat. 18'.
10	F.		☾ η Ω 6 <sup>h</sup> . 29'.
11	Sa.		12. ☾ κ η 21 <sup>h</sup> . 46'.
12	Su.	15th Sunday after Trinity.	14. ☾ 4ad ♄ ≈ 11 <sup>h</sup> . 19'.
13	M.		☾ η 12 <sup>h</sup> . 12'.
14	Tu.	Holy Cross.	☾ κ ≈ 16 <sup>h</sup> . 28'.
15	W.		☾ λ ≈ 21 <sup>h</sup> . 36'.
16	Th.		15. ☾ β η 2 <sup>h</sup> . 47'.
17	F.	Lambert.	16. ♂ Ophiu. diff. Lat. 32'.
18	Sa.		☾ ♂ Ophiu. 14 <sup>h</sup> . 15'.
19	Su.	16th Sunday after Trinity.	☾ ♂ 14 <sup>h</sup> . 44'.
20	M.		☾ β Ophiu. 16 <sup>h</sup> . 6'.
21	Tu.	St. Matthew.	17. ☾ λ ♄ 20 <sup>h</sup> . 5'.
22	W.	K. Geo. III. crown'd 1761.	18. ☾ σ ♄ 8 <sup>h</sup> . 20'.
23	Th.		21. ☾ ε η 12 <sup>h</sup> . 44'.
24	F.		22. ☾ enters ♄ 17 <sup>h</sup> . 35'.
25	Sa.		23. ☾ 2ad ♄ ≈ 16 <sup>h</sup> . 57'.
			☾ 3ad ♄ ≈ 17 <sup>h</sup> . 4'.
26	Su.	17th S. aft. Tr. S. Cyprian.	24. ♀ Stationary.
27	M.		☾ 33 ♄ 16 <sup>h</sup> . 24'.
28	Tu.		
29	W.	St. Mich. Pri. Char. Aug.	
30	Th.	S. Jerome. [born.	



[98] SEPTEMBER 1779. II.

Days of the Month.	Days of the Week.	Sun's Longitude.	Sun's Right Asc. in Time.	Sun's Declin. North.	Equat. of Time. Sub.	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
1	W.	5. 8. 48. 47	10. 41. 42, 6	8. 16. 32	0. 14, 4	18, 8
2	Th.	5. 9. 46. 56	10. 45. 20, 3	7. 54. 39	0. 33, 2	19, 0
3	F.	5. 10. 45. 8	10. 48. 57, 7	7. 32. 39	0. 52, 2	19, 3
4	Sa.	5. 11. 43. 22	10. 52. 34, 9	7. 10. 30	1. 11, 5	19, 5
5	Su.	5. 12. 41. 37	10. 56. 11, 9	6. 48. 14	1. 31, 0	19, 7
6	M.	5. 13. 39. 55	10. 59. 48, 7	6. 25. 52	1. 50, 7	19, 9
7	Tu.	5. 14. 38. 16	11. 3. 25, 4	6. 3. 23	2. 10, 6	20, 1
8	W.	5. 15. 36. 38	11. 7. 1, 8	5. 40. 48	2. 30, 7	20, 2
9	Th.	5. 16. 35. 2	11. 10. 38, 1	5. 18. 7	2. 50, 9	20, 4
10	F.	5. 17. 33. 28	11. 14. 14, 2	4. 55. 21	3. 11, 3	20, 6
11	Sa.	5. 18. 31. 56	11. 17. 50, 1	4. 32. 29	3. 31, 9	20, 7
12	Su.	5. 19. 30. 26	11. 21. 25, 9	4. 9. 33	3. 52, 6	20, 7
13	M.	5. 20. 28. 57	11. 25. 1, 7	3. 46. 33	4. 13, 3	20, 8
14	Tu.	5. 21. 27. 30	11. 28. 37, 4	3. 23. 28	4. 34, 1	20, 9
15	W.	5. 22. 26. 5	11. 32. 13, 0	3. 0. 20	4. 55, 0	20, 9
16	Th.	5. 23. 24. 42	11. 35. 48, 6	2. 37. 8	5. 15, 9	21, 0
17	F.	5. 24. 23. 20	11. 39. 24, 1	2. 13. 54	5. 36, 5	21, 0
18	Sa.	5. 25. 22. 0	11. 42. 59, 6	1. 50. 37	5. 57, 9	20, 9
19	Su.	5. 26. 20. 42	11. 46. 35, 2	1. 27. 17	6. 18, 8	21, 0
20	M.	5. 27. 19. 25	11. 50. 10, 7	1. 3. 56	6. 39, 8	20, 9
21	Tu.	5. 28. 18. 9	11. 53. 46, 3	0. 40. 33	7. 0, 7	20, 9
22	W.	5. 29. 16. 55	11. 57. 21, 9	0. 17. 9	7. 21, 6	20, 7
23	Th.	6. 0. 15. 43	12. 0. 57, 7	0. 6. 16	7. 42, 3	20, 6
24	F.	6. 1. 14. 33	12. 4. 33, 5	0. 29. 41	8. 2, 9	20, 5
25	Sa.	6. 2. 13. 25	12. 8. 9, 5	0. 53. 7	8. 23, 4	20, 3
26	Su.	6. 3. 12. 19	12. 11. 45, 7	1. 16. 33	8. 43, 7	20, 1
27	M.	6. 4. 11. 15	12. 15. 22, 1	1. 39. 59	9. 3, 8	19, 9
28	Tu.	6. 5. 10. 13	12. 18. 58, 7	2. 3. 24	9. 23, 7	19, 7
29	W.	6. 6. 9. 14	12. 22. 35, 6	2. 26. 49	9. 43, 4	19, 4
30	Th.	6. 7. 8. 17	12. 26. 12, 7	2. 50. 12	10. 2, 8	19, 1

# III. SEPTEMBER 1779. [99]

Days.	Semidiameter of the Sun.	Time of D <sup>r</sup> passing the Meridian.	Hourly Motion of the Sun.	Logarithm of the Sun's Distance.	Place of the Moon's Node.
	M. S.	M. S.	M. S.		S. D. M.
1	15. 54,9	1. 4,3	2. 25,3	0. 003582	2. 6. 31
7	15. 56,4	1. 4,1	2. 25,7	0. 002940	2. 6. 11
13	15. 57,9	1. 4,0	2. 26,2	0. 002245	2. 5. 52
19	15. 59,4	1. 4,0	2. 26,7	0. 001505	2. 5. 33
25	16. 1,1	1. 4,1	2. 27,3	0. 000754	2. 5. 14

The Eclipses of JUPITER's Satellites will not be visible this Month, JUPITER being too near the Sun.

[100] SEPTEMBER 1779. IV.

Days.	Heliocen- tric Lon- gitude.	Heliocen- tric Lat- tude.	Geocen- tric Lon- gitude.	Geocen- tric Lat- tude.	Declina- tion.	Passage over Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.
MERCURY. Inf. $\phi$ 14 <sup>d</sup> . 20 <sup>h</sup> . Gr. El. 30 <sup>d</sup> .						
1	9. 29. 15	6. 42 S	6. 0. 50	3. 56 S	3. 57 S	1. 16
4	10. 9. 12	6. 57	6. 0. 33	4. 11	4. 4	1. 4
7	10. 19. 53	6. 58	5. 29. 19	4. 14	3. 37	0. 50
10	11. 1. 25	6. 44	5. 27. 7	4. 2	2. 33	0. 29
13	11. 13. 59	6. 10	5. 24. 13	3. 34	0. 59 S	0. 8
16	11. 27. 46	5. 13	5. 21. 5	2. 48	0. 58 N	23. 41
19	0. 12. 51	3. 49	5. 18. 21	1. 52	2. 54	23. 22
22	0. 29. 19	2. 0 S	5. 16. 40	0. 52 S	4. 28	23. 9
25	1. 17. 0	0. 8 N	5. 16. 25	0. 3 N	5. 25	23. 0
28	2. 5. 35	2. 22	5. 17. 41	0. 49	5. 38	22. 57
30	2. 18. 13	3. 45	5. 19. 16	1. 13	5. 22	22. 56

VENUS.

1	4. 7. 22	2. 42 N	4. 25. 49	1. 10 N	14. 2 N	23. 12
7	4. 17. 9	3. 1	5. 3. 15	1. 16	11. 32	23. 19
13	4. 26. 53	3. 14	5. 10. 41	1. 22	8. 50	23. 26
19	5. 6. 39	3. 21	5. 18. 9	1. 24	6. 0	23. 32
25	5. 16. 23	3. 23	5. 25. 37	1. 26	3. 3	23. 39

MARS.  $\square$  1<sup>d</sup>. 1<sup>h</sup>. 2<sup>h</sup>.

1	9. 24. 40	1. 42 S	8. 8. 50	2. 26 S	24. 12 S	5. 45
7	9. 28. 22	1. 44	8. 12. 29	2. 25	24. 42	5. 39
13	10. 2. 4	1. 47	8. 16. 15	2. 22	25. 6	5. 34
19	10. 5. 48	1. 48	8. 20. 6	2. 19	25. 25	5. 29
25	10. 9. 33	1. 50	8. 24. 3	2. 16	25. 36	5. 26

JUPITER.  $\phi$  30<sup>d</sup>. 14<sup>h</sup>.

1	6. 5. 30	1. 19 N	6. 1. 25	1. 8 N	0. 28 N	1. 25
7	6. 5. 57	1. 19	6. 2. 40	1. 7	0. 2 S	1. 8
13	6. 6. 24	1. 19	6. 3. 57	1. 7	0. 33	0. 51
19	6. 6. 52	1. 19	6. 5. 14	1. 7	1. 3	0. 34
25	6. 7. 19	1. 19	6. 6. 31	1. 7	1. 34	0. 18

SATURN.

1	7. 27. 3	2. 2 N	7. 21. 30	1. 59 N	16. 15 S	4. 36
7	7. 27. 14	2. 2	7. 21. 53	1. 58	16. 21	4. 16
13	7. 27. 25	2. 2	7. 22. 19	1. 56	16. 30	3. 56
19	7. 27. 36	2. 1	7. 22. 47	1. 55	16. 39	3. 36
25	7. 27. 47	2. 1	7. 23. 17	1. 54	16. 48	3. 16



# V. SEPTEMBER 1779. [101]

Days of the Month.	Days of the Week.	Moon's Longitude at Noon.	Moon's Longitude at Midnight.	Moon's Latitude at Noon.	Moon's Latitude at Midn.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
1	W.	1. 11. 53. 44	1. 18. 29. 54	2. 5. 6 S	1. 32. 40 S
2	Th.	1. 25. 10. 12	2. 1. 54. 44	0. 58. 32 S	0. 23. 12 S
3	F.	2. 8. 43. 34	2. 15. 36. 57	0. 12. 50 N	0. 49. 6 N
4	Sa.	2. 22. 34. 58	2. 29. 37. 43	1. 25. 2	2. 0. 4
5	Su.	3. 6. 45. 9	3. 13. 57. 7	2. 33. 35	3. 5. 0
6	M.	3. 21. 13. 15	3. 28. 33. 9	3. 33. 43	3. 59. 7
7	Tu.	4. 5. 56. 10	4. 13. 21. 29	4. 20. 43	4. 38. 0
8	W.	4. 20. 48. 11	4. 28. 15. 11	4. 50. 37	4. 58. 18
9	Th.	5. 5. 41. 22	5. 13. 5. 33	5. 0. 54	4. 58. 26
10	F.	5. 20. 26. 41	5. 27. 43. 39	4. 51. 1	4. 38. 54
11	Sa.	6. 4. 55. 33	6. 12. 1. 38	4. 22. 28	4. 2. 8
12	Su.	6. 19. 1. 27	6. 25. 54. 34	3. 38. 22	3. 11. 48
13	M.	7. 2. 40. 47	7. 9. 20. 12	2. 42. 51	2. 12. 7
14	Tu.	7. 15. 53. 0	7. 22. 19. 24	1. 40. 6	1. 7. 15
15	W.	7. 28. 39. 57	8. 4. 55. 4	0. 34. 2 N	0. 0. 51 N
16	Th.	8. 11. 5. 23	8. 17. 11. 30	0. 31. 56 S	1. 4. 0 S
17	F.	8. 23. 14. 7	8. 29. 13. 49	1. 35. 2	2. 4. 46
18	Sa.	9. 5. 11. 24	9. 11. 7. 24	2. 32. 57	2. 59. 19
19	Su.	9. 17. 2. 34	9. 22. 57. 25	3. 23. 42	3. 45. 49
20	M.	9. 28. 52. 38	10. 4. 48. 40	4. 5. 35	4. 22. 38
21	Tu.	10. 10. 46. 4	10. 16. 45. 13	4. 36. 56	4. 48. 14
22	W.	10. 22. 46. 29	10. 28. 50. 12	4. 56. 25	5. 1. 18
23	Th.	11. 4. 56. 36	11. 11. 5. 49	5. 2. 48	5. 0. 47
24	F.	11. 17. 18. 3	11. 23. 33. 17	4. 55. 14	4. 46. 3
25	Sa.	11. 29. 51. 36	0. 6. 12. 58	4. 33. 20	4. 17. 6
26	Su.	0. 12. 37. 20	0. 19. 4. 38	3. 57. 29	3. 34. 39
27	M.	0. 25. 34. 49	1. 2. 7. 51	3. 8. 50	2. 40. 18
28	Tu.	1. 8. 43. 40	1. 15. 22. 11	2. 9. 22	1. 36. 25
29	W.	1. 22. 3. 25	1. 28. 47. 23	1. 1. 52 S	0. 26. 11 S
30	Th.	2. 5. 34. 3	2. 12. 23. 29	0. 10. 12 N	0. 46. 36 N

[102] SEPTEMBER 1779. VI.

Days of the Month.	Days of the Week.	J's Age.	J's Passage over Merid.	J's Right Ascen. at Noon.	J's Right Ascen. at Midn.	J's Declinat. at Noon.	J's Declination at Midn.
			H. M.	D. M.	D. M.	D. M.	D. M.
1	W.	22	16. 32	40. 7	46. 29	13. 26 N	15. 52 N
2	Th.	23	17. 25	53. 5	59. 54	18. 8	20. 12
3	F.	24	18. 21	66. 58	74. 17	22. 0	23. 30
4	Sa.	25	19. 23	81. 50	89. 36	24. 40	25. 28
5	Su.	26	20. 25	97. 30	105. 30	25. 51	25. 48
6	M.	27	21. 28	113. 33	121. 34	25. 18	24. 22
7	Tu.	28	22. 28	129. 29	137. 15	23. 0	21. 16
8	W.	29	23. 26	144. 50	152. 13	19. 10	16. 45
9	Th.	1	0	159. 23	166. 22	14. 6	11. 14
10	F.	2	0. 19	173. 9	179. 46	8. 15	5. 10 N
11	Sa.	3	1. 10	186. 15	192. 38	2. 3 N	1. 3 S
12	Su.	4	1. 58	198. 56	205. 12	4. 5 S	7. 2
13	M.	5	2. 46	211. 26	217. 39	9. 52	12. 32
14	Tu.	6	3. 34	223. 55	230. 12	15. 1	17. 17
15	W.	7	4. 23	236. 34	242. 58	19. 20	21. 8
16	Th.	8	5. 13	249. 26	255. 58	22. 39	23. 55
17	F.	9	6. 3	262. 33	269. 9	24. 53	25. 33
18	Sa.	10	6. 54	275. 46	282. 23	25. 55	25. 59
19	Su.	11	7. 45	288. 57	295. 29	25. 45	25. 14
20	M.	12	8. 34	301. 56	308. 19	24. 25	23. 20
21	Tu.	13	9. 22	314. 35	320. 45	21. 59	20. 25
22	W.	14	10. 8	326. 50	332. 49	18. 36	16. 36
23	Th.	15	10. 53	338. 42	344. 30	14. 24	12. 3
24	F.	16	11. 37	350. 16	355. 59	9. 33	6. 56
25	Sa.	17	12. 20	1. 41	7. 24	4. 14 S	1. 28 S
26	Su.	18	13. 4	13. 9	18. 58	1. 21 N	4. 10 N
27	M.	19	13. 49	24. 53	30. 53	6. 58	9. 43
28	Tu.	20	14. 38	37. 3	43. 23	12. 23	14. 55
29	W.	21	15. 30	49. 55	56. 40	17. 18	19. 29
30	Th.	22	16. 26	63. 37	70. 48	21. 25	23. 5



# VII. SEPTEMBER 1779. [103]

Days of the Month.	Days of the Week.	Semid. at Noon.	Semid. at Midnight.	Hor. Par. at Noon.	Hor. Par. at Midnight.	Prop. at Noon.	Prop. at Midnight.
		M. S.	M. S.	M. S.	M. S.		
1	W.	15. 37	15. 42	57. 19	57. 38	4976	4946
2	Th.	15. 47	15. 52	57. 56	58. 15	4923	4900
3	F.	15. 58	16. 3	58. 36	58. 53	4874	4853
4	Sa.	16. 8	16. 13	59. 13	59. 30	4825	4808
5	Su.	16. 18	16. 22	59. 48	60. 3	4780	4768
6	M.	16. 26	16. 29	60. 17	60. 28	4751	4737
7	Tu.	16. 31	16. 32	60. 35	60. 40	4729	4723
8	W.	16. 32	16. 31	60. 41	60. 38	4722	4725
9	Th.	16. 29	16. 27	60. 31	60. 21	4734	4746
10	F.	16. 23	16. 18	60. 6	59. 49	4764	4784
11	Sa.	16. 13	16. 7	59. 29	59. 7	4809	4835
12	Su.	16. 0	15. 53	58. 42	58. 16	4866	4898
13	M.	15. 45	15. 38	57. 50	57. 23	4930	4965
14	Tu.	15. 31	15. 24	56. 58	56. 32	4996	5029
15	W.	15. 18	15. 12	56. 9	55. 47	5059	5087
16	Th.	15. 7	15. 2	55. 28	55. 10	5112	5136
17	F.	14. 58	14. 55	54. 55	54. 43	5155	5171
18	Sa.	14. 52	14. 50	54. 33	54. 26	5185	5194
19	Su.	14. 48	14. 48	54. 20	54. 18	5202	5205
20	M.	14. 48	14. 48	54. 18	54. 20	5205	5202
21	Tu.	14. 49	14. 51	54. 24	54. 30	5197	5189
22	W.	14. 53	14. 56	54. 38	54. 47	5178	5166
23	Th.	14. 59	15. 2	54. 58	55. 10	5152	5136
24	F.	15. 6	15. 9	55. 24	55. 37	5118	5100
25	Sa.	15. 13	15. 17	55. 52	56. 7	5081	5062
26	Su.	15. 21	15. 26	56. 22	56. 37	5042	5023
27	M.	15. 30	15. 34	56. 52	57. 7	5004	4985
28	Tu.	15. 38	15. 42	57. 22	57. 36	4966	4949
29	W.	15. 46	15. 50	57. 50	58. 5	4931	4912
30	Th.	15. 53	15. 57	58. 18	58. 32	4896	4878



[104] SEPTEMBER 1779. VIII.

Distances of  $\gamma$ 's Center from  $\odot$ , and from Stars east of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Pollux.	68. 42. 27	67. 3. 42	65. 24. 42	63. 45. 26
2		55. 25. 5	53. 44. 13	52. 3. 5	50. 21. 41
3		41. 50. 54			
1	The Sun.	116. 53. 54	115. 22. 42	113. 51. 14	112. 19. 29
2		104. 36. 37	103. 3. 12	101. 29. 30	99. 55. 32
3		92. 1. 34	90. 25. 56	88. 50. 1	87. 13. 49
4		79. 8. 35	77. 30. 42	75. 52. 33	74. 14. 7
5		65. 57. 59	64. 18. 0	62. 37. 45	60. 57. 17
6		52. 31. 47	50. 50. 4	49. 8. 13	47. 26. 13
7		38. 54. 25			
12	Antares.	48. 18. 47	46. 35. 27	44. 52. 33	43. 10. 7
13		34. 44. 28	33. 4. 45	31. 25. 32	29. 46. 49
14	$\alpha$ Aquilæ.	74. 11. 57	72. 52. 3	71. 32. 45	70. 14. 4
15		63. 50. 31	62. 35. 58	61. 22. 10	60. 9. 11
16	Fomal- haut.	80. 10. 27	78. 41. 56	77. 13. 41	75. 45. 44
17		68. 30. 3	67. 3. 44	65. 37. 41	64. 11. 53
18		57. 6. 46			
18	$\alpha$ Pegasi.	76. 58. 15	75. 37. 25	74. 16. 45	72. 56. 17
19		66. 16. 59	64. 57. 48	63. 38. 52	62. 20. 11
20		55. 51. 0			
20	$\alpha$ Arietis.	96. 19. 0	94. 52. 20	93. 25. 37	91. 58. 50
21		84. 43. 50	83. 16. 39	81. 49. 18	80. 21. 52
22		73. 3. 20	71. 35. 19	70. 7. 11	68. 38. 57
23		61. 16. 17	59. 47. 28	58. 18. 33	56. 49. 34
24	Aldeba- ran.	79. 1. 10	77. 28. 26	75. 55. 31	74. 22. 44
25		66. 33. 57	64. 59. 41	63. 25. 13	61. 50. 34
26		53. 54. 34	52. 18. 50	50. 42. 56	49. 6. 52
27		41. 4. 17	39. 27. 21	37. 50. 19	36. 13. 12
28		28. 6. 45	26. 29. 33	24. 52. 27	23. 15. 29
29	Pollux.	58. 30. 24	56. 49. 29	55. 8. 23	53. 27. 8
30		44. 58. 26	43. 16. 13	41. 33. 50	39. 51. 19
O.1		31. 16. 38			
30	The Sun.	121. 34. 14	119. 59. 30	118. 24. 35	116. 49. 29
O.1		108. 51. 20			

## IX. SEPTEMBER 1779. [105]

Distances of  $\beta$ 's Center from  $\odot$ , and from Stars east of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Pollux.	62. 5. 53	60. 26. 5	58. 46. 1	57. 5. 41
2		48. 40. 2	46. 58. 7	45. 15. 58	43. 33. 33
1	The Sun.	110. 47. 28	109. 15. 10	107. 42. 36	106. 9. 45
2		98. 21. 17	96. 46. 46	95. 11. 59	93. 36. 55
3		85. 37. 20	84. 0. 34	82. 23. 31	80. 46. 12
4		72. 35. 25	70. 56. 27	69. 17. 13	67. 37. 44
5		59. 16. 36	57. 35. 42	55. 54. 35	54. 13. 17
6		45. 44. 4	44. 1. 46	42. 19. 24	40. 36. 56
11	Antares.	55. 16. 21	53. 31. 20	51. 46. 45	50. 2. 33
12		41. 28. 6	39. 46. 30	38. 5. 21	36. 24. 40
13		28. 8. 36			
13	$\alpha$ Aquilæ.	79. 37. 9	78. 15. 3	76. 53. 28	75. 32. 27
14		68. 56. 2	67. 38. 36	66. 21. 53	65. 5. 50
15		58. 56. 59			
15	Fomalhaut.	86. 7. 29	84. 37. 47	83. 8. 22	81. 39. 16
16		74. 18. 3	72. 50. 39	71. 23. 31	69. 56. 39
17		62. 46. 21	61. 21. 5	59. 56. 3	58. 31. 17
18	$\alpha$ Pegasi.	71. 36. 0	70. 15. 55	68. 56. 3	67. 36. 25
19		61. 1. 46	59. 43. 37	58. 25. 47	57. 8. 14
20	$\alpha$ Arietis.	90. 31. 59	89. 5. 4	87. 38. 4	86. 10. 59
21		78. 54. 21	77. 26. 45	75. 59. 3	74. 31. 14
22		67. 10. 37	65. 42. 10	64. 13. 38	62. 45. 0
23		55. 20. 29			
23	Aldebaran.	85. 10. 12	83. 38. 14	82. 6. 4	80. 33. 43
24		72. 49. 6	71. 15. 36	69. 41. 55	68. 8. 2
25		60. 15. 44	58. 40. 42	57. 5. 30	55. 30. 7
26		47. 30. 39	45. 54. 16	44. 17. 44	42. 41. 5
27		34. 35. 59	32. 58. 42	31. 21. 23	29. 44. 4
28		21. 38. 42			
28	Pollux.	65. 12. 20	63. 32. 7	61. 51. 43	60. 11. 9
29		51. 45. 42	50. 4. 7	48. 22. 23	46. 40. 29
30		38. 8. 38	36. 25. 49	34. 42. 53	32. 59. 49
30	The Sun.	115. 14. 12	113. 38. 45	112. 3. 7	110. 37. 19

[106] SEPTEMBER 1779. X.

Distances of  $\gamma$ 's Center from  $\odot$ , and from Stars west of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	$\alpha$ Pegasi.	54. 54. 10	56. 19. 59	57. 46. 25	59. 13. 33
2		66. 38. 3	68. 8. 34	69. 39. 32	71. 10. 58
3		78. 54. 26			
3	$\alpha$ Arietis.	35. 20. 3	36. 56. 7	38. 32. 56	40. 10. 28
4		48. 27. 47	50. 8. 54	51. 50. 31	53. 32. 37
5		62. 9. 22			
5	Aldeba- ran.	31. 4. 10	32. 50. 11	34. 36. 35	36. 23. 21
6		45. 22. 15	47. 10. 55	48. 59. 49	50. 48. 58
7		59. 57. 45	61. 48. 0	63. 38. 22	65. 28. 51
8		74. 42. 29	76. 33. 19	78. 24. 9	80. 14. 58
13	The Sun.	42. 16. 5	43. 48. 39	45. 20. 53	46. 52. 44
14		54. 26. 32	55. 56. 11	57. 25. 29	58. 54. 25
15		66. 13. 56	67. 40. 50	69. 7. 26	70. 33. 43
16		77. 40. 43	79. 5. 17	80. 29. 37	81. 53. 42
17		88. 50. 49	90. 13. 37	91. 36. 14	92. 58. 42
18		99. 48. 49	101. 10. 27	102. 32. 0	103. 53. 26
19		110. 39. 36	112. 0. 40	113. 21. 43	114. 42. 44
17	Antares.	16. 47. 22	18. 14. 56	19. 42. 39	21. 10. 32
18		28. 31. 12	29. 59. 23	31. 27. 33	32. 55. 44
19		40. 16. 31	41. 44. 39	43. 12. 48	44. 40. 58
20		52. 2. 15	53. 30. 38	54. 59. 6	56. 27. 37
21		63. 51. 25	65. 20. 28	66. 49. 38	68. 18. 55
22		75. 47. 14	77. 17. 19	78. 47. 34	80. 17. 58
23		87. 52. 27	89. 23. 52	90. 55. 28	92. 27. 15
24		100. 9. 1	101. 41. 57	103. 15. 4	104. 48. 23
25	$\alpha$ Aquile.	67. 40. 19	68. 56. 45	70. 13. 40	71. 31. 5
26		78. 4. 41	79. 24. 32	80. 44. 43	82. 5. 11
27	Fomal- haut.	56. 11. 30	57. 44. 7	59. 17. 6	60. 50. 26
28		68. 42. 7	70. 17. 21	71. 52. 48	73. 28. 32
29		81. 30. 47			
29	$\alpha$ Pegasi.	63. 46. 4	65. 16. 4	66. 46. 31	68. 17. 22
30		75. 57. 3	77. 29. 58	79. 3. 9	80. 36. 34
O. 1		88. 26. 58			



# **XI. SEPTEMBER 1779. [107]**

Distances of  $\gamma$ 's Center from  $\odot$ , and from Stars west of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	$\alpha$ Pegasi.	60. 41. 17	62. 9. 39	63. 38. 34	65. 8. 2
2		72. 42. 52	74. 15. 11	75. 47. 53	77. 20. 59
3	$\alpha$ Arietis.	41. 48. 41	43. 27. 33	45. 7. 3	46. 47. 9
4		55. 15. 9	56. 58. 7	58. 41. 28	60. 25. 14
5	Aldebaran.	38. 10. 29	39. 57. 58	41. 45. 45	43. 33. 51
6		52. 38. 21	54. 27. 56	56. 17. 42	58. 7. 38
7		67. 19. 27	69. 10. 8	71. 0. 52	72. 51. 39
8		82. 5. 45			
12	The Sun.			39. 9. 52	40. 43. 9
13		48. 24. 14	49. 55. 21	51. 26. 7	52. 50. 34
14		60. 23. 0	61. 54. 14	63. 19. 8	64. 46. 42
15		71. 59. 41	73. 25. 22	74. 50. 46	76. 15. 53
16		83. 17. 33	84. 41. 11	86. 4. 36	87. 27. 49
17		94. 20. 59	95. 43. 9	97. 5. 10	98. 27. 4
18		105. 14. 47	106. 36. 4	107. 57. 18	109. 18. 29
19		116. 3. 44	117. 24. 44	118. 45. 45	120. 8. 47
17	Antares.	22. 38. 31	24. 6. 37	25. 34. 46	27. 2. 57
18		34. 23. 54	35. 52. 3	37. 20. 12	38. 48. 21
19		46. 9. 9	47. 37. 22	49. 5. 37	50. 33. 55
20		57. 56. 12	59. 24. 52	60. 53. 37	62. 22. 28
21		69. 48. 19	71. 17. 50	72. 47. 30	74. 17. 18
22		81. 48. 31	83. 19. 15	84. 50. 9	86. 21. 13
23		93. 59. 13	95. 31. 23	97. 3. 44	98. 36. 17
24		106. 21. 54			
24	$\alpha$ Aquilæ.	62. 40. 21	63. 54. 26	65. 9. 9	66. 24. 27
25		72. 48. 59	74. 7. 19	75. 26. 3	76. 45. 10
26		83. 25. 57			
26	Fomalhaut.	50. 5. 14	51. 36. 9	53. 7. 30	54. 39. 18
27		62. 24. 9	63. 58. 11	65. 32. 31	67. 7. 10
28		75. 4. 32	76. 40. 46	78. 17. 14	79. 53. 55
29	$\alpha$ Pegasi.	69. 48. 36	71. 20. 13	72. 52. 10	74. 24. 27
30		82. 10. 13	83. 44. 7	85. 18. 13	86. 52. 30

108] S E P T E M B E R 1779. XII.

The Satellites of JUPITER are not visible this Month,  
JUPITER being too near the SUN.

OCTOBER 1779. [109]			Phases of the Moon.
Days of the Month.	Days of the Week.	Sundays, Holidays, &c.	D. H. M.
1	F.	Remigius.	Last Quarter — 2. 10. 59
2	Sa.		New Moon — 9. 5. 13
3	Su.	18th Sunday after Trinity.	First Quarter — 16. 21. 52
4	M.		Full Moon — 24. 18. 52
5	Tu.		Last Quarter — 31. 17. 47
6	W.		D. Other Phenomena.
7	Th.		1. ☾ 125 8 5 <sup>h</sup> . 23'.
8	F.		☾ 132 8 8 <sup>h</sup> . 58'.
9	Sa.	St. Denys.	2. ☾ 11 6 <sup>h</sup> . 23'.
10	Su.	19th Sund. after Tr. Oxf. [and Cam. Ter. begin.	3. ☾ 11 5 <sup>h</sup> . 43'.
11	M.		4. ☾ 12 5 <sup>h</sup> . 4'.
12	Tu.	Transf. of K. Edw. Conf.	5. ☾ 12 4 <sup>h</sup> . diff. Lat. 14'.
13	W.		☾ 11 14 <sup>h</sup> . 58'.
14	Th.		6. ☾ 11 23 <sup>h</sup> . 35'.
15	F.		8. ☾ 12 7 <sup>h</sup> . diff. Lat. 3'.
16	Sa.		9. ☾ 11 12 <sup>h</sup> . diff. Lat. 35'.
17	Su.	20th Su. af. Trin. Ethel. St. Luke. [dred.	12. ☾ 11 1 <sup>h</sup> . 52'.
18	M.		☾ 12 2 <sup>h</sup> . 22'.
19	Tu.		☾ 12 6 <sup>h</sup> . 56'.
20	W.		☾ 12 12 <sup>h</sup> . 0'.
21	Th.		13. ☾ 12 Ophiuchi 22 <sup>h</sup> . 52'.
22	F.		14. ☾ 12 Ophiuchi 0 <sup>h</sup> . 43'.
23	Sa.		15. ☾ 12 4 <sup>h</sup> . 20'.
24	Su.	21st Sunday after Trinity. K. Geo. III. Accf. Crisp. K. Geo. III. procl. 1760.	☾ 12 11 <sup>h</sup> . 55'.
25	M.		☾ 12 14 <sup>h</sup> . 27'.
26	Tu.		☾ 12 16 <sup>h</sup> . 29'.
27	W.		18. ☾ 12 20 <sup>h</sup> . 51'.
28	Th.		21. ☾ 12 3 <sup>h</sup> . 26'.
29	F.		22. ☾ 12 33 <sup>h</sup> . 44'.
30	Sa.		23. ☾ enters ♍ at 1 <sup>h</sup> . 26'.
31	Su.	22d Sunday after Trinity.	28. ☾ 125 8 11 <sup>h</sup> . 46'.
			☾ 132 8 14 <sup>h</sup> . 43'.
			29. ☾ 11 Im. 10 <sup>h</sup> . 34 <sup>1</sup> / <sub>2</sub> .*
			14 <sup>1</sup> / <sub>2</sub> S. of ♍'s center.
			Em. 10 <sup>h</sup> . 50 <sup>1</sup> / <sub>2</sub> .* 16 S.
			30. ☾ 11 Im. 9 <sup>h</sup> . 36'.
			6' S. of ♍'s center.
			Em. 10 <sup>h</sup> . 18 <sup>1</sup> / <sub>2</sub> .* 10 <sup>1</sup> / <sub>2</sub> S.



[110] OCTOBER 1779. II.

Days of the Month.	Days of the Week.	Sun's Longitude.			Sun's Right Asc. in Time.		Sun's Declin. South.		Equat. of Time Sub.		Diff.	
		S.	D.	M. S.	H.	M.	S.	D.	M.	S.		M. S.
1	F.	6.	8.	7. 22	12.	29.	50, 1	3.	13.	33	10. 21, 9	
2	Sa.	6.	9.	6. 30	12.	33.	27, 8	3.	39.	53	10. 40, 6	18, 7
3	Su.	6.	10.	5. 40	12.	37.	5, 9	4.	0.	9	10. 59, 0	18, 4
4	M.	6.	11.	4. 53	12.	40.	44, 4	4.	23.	24	11. 17, 1	18, 1
5	Tu.	6.	12.	4. 8	12.	44.	23, 1	4.	46.	35	11. 34, 9	17, 8
6	W.	6.	13.	3. 25	12.	48.	2, 3	5.	9.	44	11. 52, 2	17, 3
7	Th.	6.	14.	2. 45	12.	51.	41, 9	5.	32.	48	12. 9, 1	16, 9
8	F.	6.	15.	2. 7	12.	55.	21, 9	5.	55.	48	12. 29, 6	16, 5
9	Sa.	6.	16.	1. 30	12.	59.	2, 3	6.	18.	43	12. 41, 7	16, 1
10	Su.	6.	17.	0. 57	13.	2.	43, 3	6.	41.	34	12. 57, 3	15, 6
11	M.	6.	18.	0. 25	13.	6.	24, 7	7.	4.	19	13. 12, 4	15, 1
12	Tu.	6.	18.	59. 55	13.	10.	6, 6	7.	26.	58	13. 27, 0	14, 6
13	W.	6.	19.	59. 28	13.	13.	48, 9	7.	49.	31	13. 41, 2	14, 2
14	Th.	6.	20.	59. 2	13.	17.	31, 8	8.	11.	57	13. 54, 8	13, 6
15	F.	6.	21.	58. 37	13.	21.	15, 2	8.	34.	17	14. 7, 9	13, 1
16	Sa.	6.	22.	58. 15	13.	24.	59, 1	8.	56.	30	14. 20, 5	12, 6
17	Su.	6.	23.	57. 55	13.	28.	43, 7	9.	18.	33	14. 32, 5	12, 0
18	M.	6.	24.	57. 35	13.	32.	28, 8	9.	40.	29	14. 43, 9	11, 4
19	Tu.	6.	25.	57. 17	13.	36.	14, 4	10.	2.	16	14. 54, 7	10, 8
20	W.	6.	26.	57. 1	13.	40.	0, 8	10.	23.	55	15. 5, 0	10, 3
21	Th.	6.	27.	56. 47	13.	43.	47, 7	10.	45.	24	15. 14, 6	9, 6
22	F.	6.	28.	56. 35	13.	47.	35, 3	11.	6.	44	15. 23, 6	9, 0
23	Sa.	6.	29.	56. 24	13.	51.	23, 5	11.	27.	53	15. 31, 9	8, 3
24	Su.	7.	0.	56. 15	13.	55.	12, 4	11.	48.	52	15. 39, 5	7, 6
25	M.	7.	1.	56. 8	13.	59.	2, 0	12.	9.	40	15. 46, 4	6, 9
26	Tu.	7.	2.	56. 4	14.	2.	52, 4	12.	30.	18	15. 52, 5	6, 1
27	W.	7.	3.	56. 1	14.	6.	43, 6	12.	50.	44	15. 58, 0	5, 5
28	Th.	7.	4.	56. 0	14.	10.	35, 4	13.	10.	56	16. 2, 7	4, 7
29	F.	7.	5.	56. 2	14.	14.	28, 1	13.	30.	58	16. 6, 6	3, 9
30	Sa.	7.	6.	56. 6	14.	18.	21, 5	13.	50.	46	16. 9, 7	3, 1
31	Su.	7.	7.	56. 12	14.	22.	15, 7	14.	10.	21	16. 12, 0	2, 3
												1, 6

# III. OCTOBER 1779. [III]

Days of the Month.	Semidiameter of the Sun.	Time of D <sup>o</sup> passing the Meridian.	Hourly Motion of the Sun.	Logarithm of the Sun's Distance.	Place of the Moon's Node.
	M. S.	M. S.	M. S.		S. D. M.
1	16. 2, 8	1. 4, 3	2. 27, 8	0. 000015	2. 4. 55
7	16. 4, 4	1. 4, 6	2. 28, 3	9. 999283	2. 4. 36
13	16. 6, 0	1. 5, 0	2. 28, 8	9. 998533	2. 4. 17
19	16. 7, 7	1. 5, 5	2. 29, 3	9. 997778	2. 3. 58
25	16. 9, 4	1. 6, 1	2. 29, 8	9. 997059	2. 3. 39

The Satellites of J U P I T E R will not be  
 visible this Month, J U P I T E R being too  
 near the S U N.

[112]		OCTOBER 1779.				IV.	
Days.	Heliocen- tric Lon- gitude.	Heliocen- tric Lati- tude.	Geocen- tric Lon- gitude.	Geocen- tric Lati- tude.	Declina- tion.	Passage over Merid	
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.	
MERCURY. Sup. $\delta$ 30 <sup>d</sup> . 10 <sup>h</sup> .							
1	2. 24. 31	4. 23 N	5. 20. 15	1. 23 N	5. 8 N	22. 56	
4	3. 13. 10	5. 54	5. 23. 53	1. 45	4. 2	23. 1	
7	4. 0. 53	6. 45	5. 28. 15	1. 56	2. 28	23. 7	
10	4. 17. 21	6. 59	6. 3. 3	1. 58	0. 35 N	23. 14	
13	5. 2. 22	6. 42	6. 8. 2	1. 53	1. 28 S	23. 21	
16	5. 15. 59	6. 3	6. 13. 10	1. 43	3. 38	23. 28	
19	5. 28. 21	5. 9	6. 18. 17	1. 29	5. 48	23. 35	
22	6. 9. 40	4. 8	6. 23. 23	1. 13	7. 58	23. 43	
25	6. 20. 7	3. 2	6. 28. 25	0. 54	10. 5	23. 50	
28	6. 29. 52	1. 56	7. 3. 23	0. 35	12. 7	23. 57	
31	7. 9. 5	0. 49	7. 8. 18	0. 15	14. 3	0. 2	
VENUS. Sup. $\delta$ 20 <sup>d</sup> . 9 <sup>h</sup> $\frac{1}{2}$ .							
1	5. 26. 6	3. 19 N	6. 3. 6	1. 24 N	0. 3 N	23. 43	
7	6. 5. 48	3. 10	6. 10. 36	1. 19	2. 58 S	23. 49	
13	6. 15. 29	2. 55	6. 18. 6	1. 13	5. 59	23. 55	
19	6. 25. 9	2. 35	6. 25. 36	1. 6	8. 53	0. 0	
25	7. 4. 46	2. 10	7. 3. 7	0. 56	11. 43	0. 6	
MARS.							
1	10. 13. 19	1. 51 S	8. 28. 7	2. 13 S	25. 40 S	5. 22	
7	10. 17. 6	1. 51	9. 2. 13	2. 9	25. 36	5. 18	
13	10. 20. 53	1. 51	9. 6. 27	2. 5	25. 24	5. 14	
19	10. 24. 41	1. 50	9. 10. 43	2. 1	25. 3	5. 10	
25	10. 28. 29	1. 49	9. 15. 2	1. 57	24. 34	5. 6	
JUPITER.							
1	6. 7. 46	1. 19 N	6. 7. 49	1. 7 N	2. 5 S	0. 0	
7	6. 8. 13	1. 19	6. 9. 7	1. 7	2. 35	23. 41	
13	6. 8. 49	1. 19	6. 10. 25	1. 7	3. 5	23. 23	
19	6. 9. 7	1. 19	6. 11. 42	1. 7	3. 35	23. 6	
25	6. 9. 35	1. 19	6. 12. 59	1. 8	4. 5	22. 48	
SATURN.							
1	7. 27. 58	2. 1 N	7. 23. 51	1. 54 N	16. 54 S	2. 58	
7	7. 28. 9	2. 0	7. 24. 26	1. 53	17. 4	2. 38	
13	7. 28. 20	2. 0	7. 25. 3	1. 51	17. 15	2. 19	
19	7. 28. 31	2. 0	7. 25. 41	1. 50	17. 25	1. 59	
25	7. 28. 42	2. 0	7. 26. 20	1. 50	17. 35	1. 39	



V. OCTOBER 1779. [113]

Days of the Month.	Days of the Week.	Moon's Longitude at Noon.	Moon's Longitude at Midnight.	Moon's Latitude at Noon.	Moon's Latitude at Midn.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
1	F.	2. 19. 15. 42	2. 26. 10. 43	1. 22. 39 N	1. 57. 48 N
2	Sa.	3. 3. 8. 32	3. 10. 9. 8	2. 31. 23	3. 2. 54
3	Su.	3. 17. 12. 27	3. 24. 18. 24	3. 31. 51	3. 57. 44
4	M.	4. 1. 26. 39	4. 8. 37. 1	4. 20. 3	4. 38. 24
5	Tu.	4. 15. 49. 4	4. 23. 2. 20	4. 52. 25	5. 1. 48
6	W.	5. 0. 16. 13	5. 7. 30. 3	5. 6. 25	5. 6. 9
7	Th.	5. 14. 43. 8	5. 21. 54. 36	5. 1. 0	4. 51. 5
8	F.	5. 29. 3. 50	6. 6. 9. 58	4. 36. 40	4. 18. 2
9	Sa.	6. 13. 12. 21	6. 20. 10. 22	3. 55. 38	3. 29. 52
10	Su.	6. 27. 3. 27	7. 3. 51. 20	3. 1. 21	2. 30. 29
11	M.	7. 10. 33. 39	7. 17. 10. 21	1. 57. 56	1. 24. 10
12	Tu.	7. 23. 41. 26	8. 0. 7. 2	0. 49. 46 N	0. 15. 5 N
13	W.	8. 6. 27. 23	8. 12. 42. 50	0. 19. 18 S	0. 53. 3 S
14	Th.	8. 18. 53. 48	8. 25. 0. 45	1. 25. 47	1. 57. 11
15	F.	9. 1. 4. 15	9. 7. 4. 50	2. 26. 58	2. 54. 57
16	Sa.	9. 13. 3. 16	9. 18. 59. 59	3. 20. 48	3. 44. 22
17	Su.	9. 24. 55. 44	10. 0. 51. 8	4. 5. 26	4. 23. 54
18	M.	10. 6. 46. 53	10. 12. 43. 30	4. 39. 32	4. 52. 10
19	Tu.	10. 18. 41. 38	10. 24. 41. 45	5. 1. 44	5. 8. 1
20	W.	11. 0. 44. 27	11. 6. 50. 7	5. 10. 55	5. 10. 22
21	Th.	11. 12. 59. 10	11. 19. 11. 53	5. 6. 15	4. 58. 30
22	F.	11. 25. 28. 33	0. 1. 49. 18	4. 47. 4	4. 32. 1
23	Sa.	0. 8. 14. 16	0. 14. 43. 27	4. 13. 23	3. 51. 16
24	Su.	0. 21. 16. 47	0. 27. 54. 12	3. 25. 52	2. 57. 24
25	M.	1. 4. 35. 27	1. 11. 20. 24	2. 26. 12	1. 52. 38
26	Tu.	1. 18. 8. 41	1. 25. 0. 7	1. 17. 10	0. 40. 17 S
27	W.	2. 1. 54. 15	2. 8. 50. 54	0. 2. 29 S	0. 35. 35 N
28	Th.	2. 15. 49. 36	2. 22. 50. 11	1. 13. 20 N	1. 50. 9
29	F.	2. 29. 52. 12	3. 6. 55. 29	2. 25. 28	2. 58. 40
30	Sa.	3. 13. 59. 41	3. 21. 4. 38	3. 29. 12	3. 56. 36
31	Su.	3. 28. 9. 58	4. 5. 15. 31	4. 20. 24	4. 40. 14

114		OCTOBER 1779.					VI.
Days of the Month.	Days of the Week.	D's Age.	D's Pass- age over Merid.	D's Right Ascen. at Noon.	D's Right Ascen. at Midn.	D's De- clination at Noon.	D's De- clination at Midn.
			H. M.	D. M.	D. M.	D. M.	D. M.
1	F.	23	17. 25	78. 11	85. 46	24. 24 N	25. 23 N
2	Sa.	24	18. 25	93. 29	101. 18	25. 57	26. 7
3	Su.	25	19. 26	109. 9	116. 59	25. 52	25. 11
4	M.	26	20. 26	124. 44	132. 22	24. 5	22. 36
5	Tu.	27	21. 24	139. 51	147. 8	20. 46	18. 36
6	W.	28	22. 16	154. 14	161. 9	16. 10	13. 30
7	Th.	29	23. 7	167. 54	174. 39	10. 39	7. 40
8	F.	30	23. 56	180. 59	187. 22	4. 36 N	1. 30 N
9	Sa.	1	0	193. 41	199. 57	1. 36 S	4. 39 S
10	Su.	2	0. 44	206. 12	212. 28	7. 37	10. 28
11	M.	3	1. 32	218. 46	225. 7	13. 8	15. 38
12	Tu.	4	2. 21	231. 31	237. 59	17. 54	19. 57
13	W.	5	3. 11	244. 32	251. 8	21. 44	23. 14
14	Th.	6	4. 2	257. 48	264. 29	24. 29	25. 20
15	F.	7	4. 54	271. 11	277. 53	25. 55	26. 12
16	Sa.	8	5. 45	284. 33	291. 9	26. 9	25. 49
17	Su.	9	6. 35	297. 41	304. 7	25. 11	24. 17
18	M.	10	7. 23	310. 27	316. 49	23. 6	21. 41
19	Tu.	11	8. 10	322. 47	328. 48	20. 1	18. 8
20	W.	12	8. 55	334. 43	340. 33	16. 4	13. 49
21	Th.	13	9. 38	346. 19	352. 3	11. 24	8. 51
22	F.	14	10. 22	357. 45	3. 28	6. 11	3. 26 S
23	Sa.	15	11. 5	9. 13	15. 3	0. 37 S	2. 15 N
24	Su.	16	11. 50	20. 58	26. 59	5. 8 N	7. 59
25	M.	17	12. 39	33. 9	39. 39	10. 46	13. 28
26	Tu.	18	13. 30	46. 3	52. 49	16. 1	18. 23
27	W.	19	14. 25	59. 48	67. 2	20. 30	22. 22
28	Th.	20	15. 24	74. 28	82. 5	23. 55	25. 7
29	F.	21	16. 24	89. 51	97. 43	25. 54	26. 16
30	Sa.	22	17. 27	105. 36	113. 28	26. 12	25. 43
31	Su.	23	18. 28	121. 13	128. 51	24. 48	23. 30

VII. OCTOBER 1779. [115]

Days of the Month.	Days of the Week.	Semid <sup>r</sup> . p at Noon.	Semid <sup>r</sup> . p at Mid- night.	Hor. Par. p at Noon.	Hor. Par. p at Midnight.	Propor. Lo- cal at Noon.	Propor. Lo- cal at Midn.	Propor. Lo- cal at Noon.
		M. S.	M. S.	M. S.	M. S.			
1	F.	16. 0	16. 3	58. 45	58. 54	4863	4852	
2	Sa.	16. 6	16. 9	59. 5	59. 15	4838	4826	
3	Su.	16. 11	16. 14	59. 25	59. 33	4813	4804	
4	M.	16. 16	16. 17	59. 40	59. 45	4795	4789	
5	Tu.	16. 18	16. 18	59. 48	59. 50	4786	4783	
6	W.	16. 17	16. 17	59. 48	59. 45	4786	4789	
7	Th.	16. 15	16. 13	59. 38	59. 31	4798	4806	
8	F.	16. 10	16. 6	59. 20	59. 7	4820	4835	
9	Sa.	16. 2	15. 58	58. 52	58. 34	4854	4876	
10	Su.	15. 52	15. 47	58. 15	57. 54	4900	4926	
11	M.	15. 41	15. 35	57. 32	57. 10	4953	4981	
12	Tu.	15. 29	15. 23	56. 48	56. 26	5009	5037	
13	W.	15. 17	15. 11	56. 5	55. 45	5064	5090	
14	Th.	15. 7	15. 2	55. 27	55. 10	5114	5136	
15	F.	14. 58	14. 55	54. 56	54. 44	5154	5170	
16	Sa.	14. 52	14. 50	54. 35	54. 28	5182	5191	
17	Su.	14. 49	14. 49	54. 24	54. 22	5197	5199	
18	M.	14. 49	14. 50	54. 24	54. 28	5197	5191	
19	Tu.	14. 52	14. 54	54. 33	54. 41	5185	5174	
20	W.	14. 57	15. 0	54. 51	55. 4	5161	5144	
21	Th.	15. 4	15. 8	55. 18	55. 34	5125	5104	
22	F.	15. 13	15. 18	55. 51	56. 10	5082	5058	
23	Sa.	15. 23	15. 28	56. 28	56. 47	5035	5010	
24	Su.	15. 33	15. 39	57. 6	57. 25	4986	4962	
25	M.	15. 43	15. 48	57. 42	57. 59	4941	4919	
26	Tu.	15. 52	15. 56	58. 15	58. 29	4900	4882	
27	W.	16. 0	16. 3	58. 43	58. 53	4865	4853	
28	Th.	16. 5	16. 7	59. 3	59. 10	4841	4832	
29	F.	16. 9	16. 10	59. 15	59. 20	4826	4820	
30	Sa.	16. 11	16. 11	59. 22	59. 24	4817	4815	
31	Su.	16. 11	16. 11	59. 24	59. 23	4815	4816	



Distances of  $\gamma$ 's Center from  $\odot$ , and from Stars east of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Regulus.	67. 29. 43	65. 46. 17	64. 2. 42	62. 18. 58
2		53. 38. 11	51. 53. 38	50. 8. 58	48. 24. 11
1	The Sun.	108. 51. 20	107. 15. 11	105. 38. 52	104. 2. 23
2		95. 57. 37	94. 20. 12	92. 42. 38	91. 4. 54
3		82. 54. 3	81. 15. 27	79. 36. 43	77. 57. 52
4		69. 41. 54	68. 2. 23	66. 22. 45	64. 43. 3
5		56. 23. 22	54. 43. 15	53. 3. 6	51. 22. 56
6		43. 1. 55	41. 21. 46	39. 41. 41	
11	$\alpha$ Aquilæ.	78. 40. 8	77. 17. 36	75. 55. 34	74. 34. 3
12		67. 54. 59	66. 37. 4	65. 19. 52	64. 3. 24
13		57. 53. 5			
13	Fomalhaut.	84. 34. 6	83. 3. 6	81. 32. 24	80. 2. 2
14		72. 34. 57	71. 6. 29	69. 38. 20	68. 10. 30
15		60. 56. 1	59. 30. 5	58. 4. 28	56. 39. 10
16	$\alpha$ Pegasi.	69. 56. 37	68. 36. 24	67. 16. 28	65. 56. 50
17		59. 23. 9	58. 5. 24	56. 48. 2	55. 31. 2
18	$\alpha$ Arietis.	88. 38. 59	87. 12. 14	85. 45. 27	84. 18. 36
19		77. 3. 20	75. 36. 4	74. 8. 41	72. 41. 13
20		65. 22. 10	63. 54. 0	62. 25. 44	60. 57. 20
21		53. 33. 37			
21	Aldebaran.	83. 17. 26	81. 45. 27	80. 13. 14	78. 40. 46
22		70. 54. 41	69. 20. 42	67. 46. 28	66. 11. 58
23		58. 15. 29	56. 39. 24	55. 3. 4	53. 26. 29
24		45. 19. 57	43. 41. 56	42. 3. 44	40. 25. 21
25		32. 11. 3	30. 31. 53	28. 52. 42	27. 13. 30
26	Pollux.	62. 25. 2	60. 42. 14	58. 59. 14	57. 16. 4
27		48. 37. 40	46. 53. 30	45. 9. 13	43. 24. 48
28		34. 41. 15			
28	Regulus.	70. 55. 58	69. 10. 58	67. 25. 55	65. 40. 48
29		56. 54. 23	55. 8. 57	53. 23. 30	51. 38. 2
30		42. 50. 45	41. 5. 20	39. 19. 59	37. 34. 42
31		28. 49. 49	27. 5. 11	25. 20. 54	23. 36. 57
N. 1		15. 4. 26			
30	The Sun.	112. 53. 44	111. 15. 6	109. 36. 28	107. 57. 48
31		99. 44. 32	98. 5. 53	96. 27. 16	94. 48. 39
N. 1		86. 36. 5			

## IX. OCTOBER 1779. [117]

Distances of  $\gamma$ 's Center from  $\odot$ , and from Stars east of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Regulus.	60. 35. 5	58. 51. 4	57. 6. 54	55. 22. 37
2		46. 39. 17			
1	The Sun.	102. 25. 45	100. 48. 57	99. 12. 0	97. 34. 53
2		89. 27. 2	87. 49. 0	86. 10. 50	84. 32. 31
3		76. 18. 53	74. 39. 48	73. 0. 37	71. 21. 19
4		63. 3. 15	61. 23. 22	59. 43. 26	58. 3. 26
5		49. 42. 44	48. 2. 31	46. 22. 18	44. 42. 6
11	$\alpha$ Aquilæ.	73. 13. 2	71. 52. 35	70. 32. 45	69. 13. 35
12		62. 47. 41	61. 32. 45	60. 18. 40	59. 5. 26
13	Fomal- haut.	78. 31. 59	77. 2. 15	75. 32. 50	74. 3. 44
14		66. 42. 59	65. 15. 46	63. 48. 52	62. 22. 17
15		55. 14. 11			
15	$\alpha$ Pegasi.	75. 20. 12	73. 58. 54	72. 37. 52	71. 17. 7
16		64. 37. 29	63. 18. 25	61. 59. 40	60. 41. 15
17	$\alpha$ Arietis.	54. 14. 24			
17		94. 25. 40	92. 59. 2	91. 32. 22	90. 5. 41
18		82. 51. 42	81. 24. 43	79. 57. 40	78. 30. 32
19		71. 13. 39	69. 45. 57	68. 18. 8	66. 50. 13
20		59. 28. 50	58. 0. 13	56. 31. 29	55. 2. 37
21	Aldeba- ran.	77. 8. 3	75. 35. 5	74. 1. 52	72. 28. 24
22		64. 37. 12	63. 2. 10	61. 26. 52	59. 51. 18
23		51. 49. 39	50. 12. 34	48. 35. 16	46. 57. 43
24		38. 46. 46	37. 8. 0	35. 29. 8	33. 50. 9
25		25. 34. 16			
25	Pollux.	69. 14. 7	67. 32. 11	65. 50. 1	64. 7. 38
26		55. 32. 42	53. 49. 11	52. 5. 30	50. 21. 40
27	Regulus.	41. 40. 16	39. 55. 38	38. 10. 55	36. 26. 7
28		63. 55. 37	62. 10. 23	60. 25. 6	58. 39. 46
29		49. 52. 32	48. 7. 3	46. 21. 36	44. 36. 10
30		35. 49. 29	34. 4. 21	32. 19. 21	30. 34. 31
31		21. 53. 20	20. 10. 11	18. 27. 40	16. 45. 44
29	The Sun.	119. 27. 57	117. 49. 27	116. 10. 55	114. 32. 22
30		106. 19. 8	104. 40. 29	103. 1. 49	101. 23. 11
31		93. 10. 6	91. 31. 32	89. 53. 0	88. 14. 32

The Satellites of JUPITER will not be visible this Month,  
JUPITER being too near the SUN.



I. NOVEMBER 1779. [121]			Phases of the Moon.
Days of the Month.	Days of the Week.	Sundays, Holidays, &c.	
			D. H. M.
			New Moon — 7. 18. 24
			First Quarter — 15. 18. 35
			Full Moon — 23. 7. 57
			Last Quarter — 30. 1. 16
1	M.	<i>All Saints.</i>	D. Other Phenomena. 1. ☾ ♄ 21 <sup>h</sup> . 9'. 3. ☾ ♄ 6 <sup>h</sup> . 35'. 4. ☾ ☿ 9 <sup>h</sup> . 47'. ☿ ♄ diff. Lat. 37'. 10. ☾ ♄ Ophiuchi 7 <sup>h</sup> . 42'. ☾ ♄ Ophiuchi 9 <sup>h</sup> . 30'. 11. ☾ ♄ 12 <sup>h</sup> . 52'. ☾ ♄ 20 <sup>h</sup> . 30'. 12. ☾ ♄ 0 <sup>h</sup> . 53'. 15. ☾ ♄ 5 <sup>h</sup> . 6'. 17. ☾ ♄ ♄ 10 <sup>h</sup> . 14'. 18. ☾ ♄ ♄ 9 <sup>h</sup> . 51'. 21. ☾ enters ♄ at 21 <sup>h</sup> . 35'. 23. ☾ eclipsed, visible. 24. ☾ 125 ♄ 19 <sup>h</sup> . 59'. ☾ 132 ♄ 22 <sup>h</sup> . 24'. 25. ♄ ♄ Ophiuchi diff. Lat. 20'. ☾ ♄ ♄ 18 <sup>h</sup> . 57'. 26. ♄ ♄ ♄ diff. Lat. 45'. ☾ ♄ ♄ 17 <sup>h</sup> . 34'. 27. ☾ ♄ ♄ 20 <sup>h</sup> . 46'. 29. ☾ ♄ 2 <sup>h</sup> . 30'. 30. ☾ ♄ 11 <sup>h</sup> . 55'.
2	Tu.	<i>Pr. Edward born.</i>	
3	W.	On morrow of All Souls,	
4	Th.	[1 ret.	
5	F.	<i>Powder-Plot, 1605.</i>	
6	Sa.	Leonard. M. T. begins. <i>(born.)</i>	
7	Su.	<i>23d Su. Tr. D. of Cumb.</i>	
8	M.	<i>Prs. Aug. Sophia born.</i>	
9	Tu.		
10	W.		
11	Th.	St. Martin.	
12	F.	On mor. of St. Mar. 2 ret.	
13	Sa.	Britius. [Cam. T. div. m.	
14	Su.	<i>24th Sunday after Trinity.</i>	
15	M.	Machutus.	
16	Tu.		
17	W.	Hugh Bp. of Lincoln.	
18	Th.	In 8 days of St. Martin,	
19	F.	[3 ret.	
20	Sa.	Edmund K. and Mart.	
21	Su.	<i>25th Sunday after Trinity.</i>	
22	M.	Cecilia.	
23	Tu.	St. Clement.	
24	W.		
25	Th.	<i>D. of Gl. born. Cath. In 15</i>	
26	F.	[days of St. Mar. 4 ret.	
27	Sa.		
28	Su.	<i>Adv. Su. Mich T. ends.</i>	
29	M.		
30	Tu.	<i>St. Andrew.</i>	

Days of the Month.	Days of the Week.	Sun's Longitude.	Sun's Right Asc. in Time.	Sun's Declin. South.	Equat. of Time. Sub.	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
1	M.	7. 8. 56. 20	14. 26. 10, 7	14. 29. 44	16. 13, 6	0, 7
2	Tu.	7. 9. 56. 30	14. 30. 6, 6	14. 48. 51	16. 14, 3	0, 2
3	W.	7. 10. 56. 43	14. 34. 3, 3	15. 7. 45	16. 14, 1	1, 0
4	Th.	7. 11. 56. 58	14. 38. 0, 9	15. 26. 23	16. 13, 1	1, 9
5	F.	7. 12. 57. 14	14. 41. 59, 3	15. 44. 47	16. 11, 2	2, 7
6	Sa.	7. 13. 57. 33	14. 45. 58, 5	16. 2. 55	16. 8, 5	3, 5
7	Su.	7. 14. 57. 54	14. 49. 58, 6	16. 20. 46	16. 5, 0	4, 4
8	M.	7. 15. 58. 17	14. 53. 59, 6	16. 38. 21	16. 0, 6	5, 2
9	Tu.	7. 16. 58. 41	14. 58. 1, 4	16. 55. 40	15. 55, 4	6, 1
10	W.	7. 17. 59. 7	15. 2. 4, 0	17. 12. 41	15. 49, 3	6, 9
11	Th.	7. 18. 59. 35	15. 6. 7, 5	17. 29. 24	15. 42, 4	7, 8
12	F.	7. 20. 0. 4	15. 10. 11, 9	17. 45. 49	15. 34, 6	8, 6
13	Sa.	7. 21. 0. 34	15. 14. 17, 0	18. 1. 55	15. 26, 0	9, 4
14	Su.	7. 22. 1. 6	15. 18. 23, 0	18. 17. 42	15. 16, 6	10, 2
15	M.	7. 23. 1. 39	15. 22. 29, 8	18. 33. 10	15. 6, 4	11, 0
16	Tu.	7. 24. 2. 13	15. 26. 37, 4	18. 48. 18	14. 55, 4	11, 9
17	W.	7. 25. 2. 49	15. 30. 45, 9	19. 3. 6	14. 43, 5	12, 7
18	Th.	7. 26. 3. 25	15. 34. 55, 1	19. 17. 34	14. 30, 8	13, 5
19	F.	7. 27. 4. 3	15. 39. 5, 2	19. 31. 40	14. 17, 3	14, 3
20	Sa.	7. 28. 4. 42	15. 43. 16, 2	19. 45. 25	14. 3, 0	15, 0
21	Su.	7. 29. 5. 23	15. 47. 27, 8	19. 58. 49	13. 48, 0	15, 9
22	M.	8. 0. 6. 4	15. 51. 40, 3	20. 11. 50	13. 32, 1	16, 7
23	Tu.	8. 1. 6. 47	15. 55. 53, 6	20. 24. 29	13. 15, 4	17, 4
24	W.	8. 2. 7. 31	16. 0. 7, 6	20. 36. 46	12. 58, 0	18, 2
25	Th.	8. 3. 8. 16	16. 4. 22, 4	20. 48. 39	12. 39, 8	19, 0
26	F.	8. 4. 9. 3	16. 8. 38, 0	21. 0. 10	12. 20, 8	19, 7
27	Sa.	8. 5. 9. 51	16. 12. 54, 3	21. 11. 16	12. 1, 1	20, 4
28	Su.	8. 6. 10. 41	16. 17. 11, 3	21. 21. 59	11. 40, 7	21, 1
29	M.	8. 7. 11. 32	16. 21. 29, 0	21. 32. 17	11. 19, 6	21, 9
30	Tu.	8. 8. 12. 25	16. 25. 47, 6	21. 42. 11	10. 57, 7	22, 5

# III. NOVEMBER 1779. [123]

Days of the Month.	Semidia- meter of the Sun.	Time of Do passing the Meridian.	Hourly Motion of the Sun.	Logarithm of the Sun's Distance.	Place of the Moon's Node.
	M. S.	M. S.	M. S.		S. D. M.
1	16. 11, 1	1. 6, 9	2. 30, 3	9. 996280	2. 3. 17
7	16. 12, 6	1. 7, 6	2. 30, 8	9. 995657	2. 2. 58
13	16. 13, 8	1. 8, 3	2. 31, 2	9. 995057	2. 2. 39
19	16. 15, 0	1. 9, 0	2. 31, 7	9. 994495	2. 2. 20
25	16. 16, 1	1. 9, 6	2. 32, 0	9. 994009	2. 2. 1

## Eclipses of the SATELLITES of J U P I T E R.

I. Satellite. Emerfions.		II. Satellite. Emerfions.		III. Satellite.	
Days	H. M. S.	Days	H. M. S.	Days	H. M. S.
1	11. 17. 54	1	20. 55. 57	4	10. 38. 37 I
3	5. 46. 16	5	10. 13. 28	4	13. 0. 31 E
5	0. 14. 38	8	23. 30. 37	11	14. 36. 8 I
6	18* 42. 58	12	12. 47. 37	11	16. 56. 54 E
8	13. 11. 13	16	2. 4. 22	18	18* 32. 54 I
10	7. 39. 26	19	15. 20. 49	18	20. 52. 32 E
12	2. 7. 33	23	4. 37. 7	25	22. 28. 55 I
13	20. 35. 42	26	17* 53. 10	26	0. 47. 26 E
15	15. 3. 45	30	7. 8. 58	IV. Satellite.	
17	9. 31. 49			12	16* 1. 34 I
19	3. 59. 46			12	16* 47. 48 E
20	22. 27. 42			29	10. 14 Sup ♂
22	16* 55. 35				
24	11. 23. 27				
26	5. 51. 19				
28	0. 19. 1				
29	18* 46. 45				



[124] NOVEMBER 1779. IV.

Days.	Heliocentric Longitude.	Heliocentric Latitude.	Geocentric Longitude.	Geocentric Latitude.	Declination.	Passage over Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.

MERCURY.

1	7. 12. 3	0. 28 N	7. 9. 54	0. 9 N	14. 40 S	0. 4
4	7. 20. 44	0. 36 S	7. 14. 43	0. 11 S	16. 27	0. 11
7	7. 29. 11	1. 37	7. 19. 28	0. 31	18. 7	0. 17
10	8. 7. 28	2. 35	7. 24. 11	0. 50	19. 39	0. 24
13	8. 15. 42	3. 29	7. 28. 51	1. 8	21. 2	0. 31
16	8. 23. 58	4. 19	8. 3. 29	1. 25	22. 16	0. 38
19	9. 2. 22	5. 5	8. 8. 5	1. 41	23. 21	0. 45
22	9. 10. 59	5. 44	8. 12. 39	1. 55	24. 14	0. 52
25	9. 19. 55	6. 17	8. 17. 9	2. 6	24. 56	0. 59
28	9. 29. 20	6. 42	8. 21. 39	2. 14	25. 27	1. 6
30	10. 5. 54	6. 53	8. 24. 36	2. 19	25. 40	1. 10

VENUS.

1	7. 15. 59	1. 38 N	7. 11. 54	0. 41 N	14. 46 S	0. 12
7	7. 25. 33	1. 7	7. 19. 26	0. 28	17. 9	0. 18
13	8. 5. 6	0. 34 N	7. 26. 58	0. 14 N	19. 16	0. 25
19	8. 14. 38	0. 0	8. 4. 30	0. 0	21. 4	0. 31
25	8. 24. 8	0. 34 S	8. 12. 2	0. 14 S	22. 29	0. 38

MARS.

1	11. 2. 56	1. 47 S	9. 20. 7	1. 51 S	23. 47 S	5. 2
7	11. 6. 45	1. 45	9. 24. 33	1. 46	22. 59	4. 57
13	11. 10. 33	1. 43	9. 29. 0	1. 41	22. 2	4. 52
19	11. 14. 20	1. 39	10. 3. 30	1. 35	20. 57	4. 46
25	11. 18. 7	1. 36	10. 8. 1	1. 30	19. 44	4. 39

JUPITER.

1	6. 10. 6	1. 19 N	6. 14. 26	1. 8 N	4. 39 S	22. 26
7	6. 10. 34	1. 19	6. 15. 40	1. 9	5. 7	22. 7
13	6. 11. 1	1. 19	6. 16. 51	1. 9	5. 34	21. 47
19	6. 11. 28	1. 19	6. 18. 0	1. 10	6. 0	21. 26
25	6. 11. 55	1. 19	6. 19. 8	1. 10	6. 25	21. 5

SATURN.  $\odot$  21<sup>d</sup>. 10<sup>h</sup> $\frac{1}{2}$ .

1	7. 28. 54	1. 59 N	7. 27. 8	1. 49 N	17. 46 S	1. 15
7	7. 29. 5	1. 59	7. 27. 51	1. 49	17. 56	0. 55
13	7. 29. 16	1. 58	7. 28. 34	1. 49	18. 6	0. 33
19	7. 29. 27	1. 58	7. 29. 16	1. 49	18. 15	0. 10
25	7. 29. 38	1. 58	7. 29. 57	1. 48	18. 25	23. 45

# V. NOVEMBER 1779. [125]

Days of the Month.	Days of the Week.	Moon's Longitude at Noon.	Moon's Longitude at Midnight.	Moon's Latitude at Noon.	Moon's Latitude at Midn.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
1	M.	4. 12. 21. 1	4. 19. 26. 13	4. 55. 47 N	5. 6. 49 N
2	Tu.	4. 26. 30. 51	5. 3. 34. 38	5. 13. 11	5. 14. 45
3	W.	5. 10. 37. 14	5. 17. 38. 25	5. 11. 35	5. 3. 47
4	Th.	5. 24. 37. 41	6. 1. 34. 51	4. 51. 29	4. 34. 56
5	F.	6. 8. 29. 29	6. 15. 21. 19	4. 14. 30	3. 50. 30
6	Sa.	6. 22. 9. 55	6. 28. 55. 6	3. 23. 22	2. 53. 36
7	Su.	7. 5. 36. 33	7. 12. 14. 7	2. 21. 41	1. 48. 7
8	M.	7. 18. 47. 35	7. 25. 16. 56	1. 13. 26	0. 38. 9 N
9	Tu.	8. 1. 42. 5	8. 8. 3. 60	0. 2. 43 N	0. 32. 22 S
10	W.	8. 14. 20. 6	8. 20. 33. 15	1. 6. 44 S	1. 39. 56
11	Th.	8. 26. 42. 45	9. 2. 48. 59	2. 11. 40	2. 41. 35
12	F.	9. 8. 52. 12	9. 14. 52. 50	3. 9. 29	3. 35. 3
13	Sa.	9. 20. 51. 33	9. 26. 48. 37	3. 58. 8	4. 18. 32
14	Su.	10. 2. 44. 38	10. 8. 40. 12	4. 36. 6	4. 50. 42
15	M.	10. 14. 35. 52	10. 20. 32. 18	5. 2. 13	5. 10. 31
16	Tu.	10. 26. 30. 2	11. 2. 29. 43	5. 15. 31	5. 17. 7
17	W.	11. 8. 31. 55	11. 14. 37. 14	5. 15. 14	5. 9. 50
18	Th.	11. 20. 46. 8	11. 26. 59. 9	5. 0. 49	4. 48. 13
19	F.	0. 3. 16. 43	0. 9. 39. 10	4. 32. 0	4. 12. 12
20	Sa.	0. 16. 6. 50	0. 22. 39. 53	3. 49. 0	3. 22. 28
21	Su.	0. 29. 18. 31	1. 6. 2. 39	2. 52. 49	2. 20. 22
22	M.	1. 12. 52. 13	1. 19. 46. 58	1. 45. 28	1. 8. 36 S
23	Tu.	1. 26. 46. 36	2. 3. 50. 39	0. 30. 14 S	0. 8. 58 N
24	W.	2. 10. 58. 35	2. 18. 9. 45	0. 48. 24 N	1. 27. 22
25	Th.	2. 25. 23. 31	3. 2. 39. 6	2. 5. 9	2. 41. 3
26	F.	3. 9. 55. 47	3. 17. 12. 47	3. 14. 27	3. 44. 40
27	Sa.	3. 24. 29. 31	4. 1. 45. 15	4. 11. 15	4. 33. 43
28	Su.	4. 8. 59. 23	4. 16. 11. 27	4. 51. 43	5. 5. 3
29	M.	4. 23. 21. 1	5. 0. 27. 44	5. 13. 31	5. 17. 9
30	Tu.	5. 7. 31. 18	5. 14. 31. 34	5. 15. 55	5. 10. 1

[126] NOVEMBER 1779. VI.

Days of the Month.	Days of the Week.	D's Age.	D's Pass- age over Merid.	D's Right Ascen. at Noon.	D's Right Asc. at Midn.	D's De- clin. at Noon.	D's De- clin. at Midn.
			H. M.	D. M.	D. M.	D. M.	D. M.
1	M.	24	19. 21	136. 18	143. 34	21. 51 N	19. 52 N
2	Tu.	25	20. 14	150. 36	157. 28	17. 36	15. 5
3	W.	26	21. 4	164. 8	170. 38	12. 24	9. 33
4	Th.	27	21. 53	177. 0	183. 16	6. 36	3. 34 N
5	F.	28	22. 38	189. 28	195. 37	0. 32 N	2. 30 S
6	Sa.	29	23. 25	201. 46	207. 55	5. 30 S	8. 24
7	Su.	1	0	214. 6	220. 21	11. 11	13. 48
8	M.	2	0. 14	226. 41	233. 6	16. 15	18. 29
9	Tu.	3	1. 3	239. 36	246. 11	20. 29	22. 12
10	W.	4	1. 54	252. 52	259. 35	23. 39	24. 47
11	Th.	5	2. 46	266. 21	273. 8	25. 37	26. 8
12	F.	6	3. 37	279. 53	286. 36	26. 19	26. 12
13	Sa.	7	4. 28	293. 14	299. 46	25. 46	25. 3
14	Su.	8	5. 17	306. 11	312. 28	24. 3	22. 47
15	M.	9	6. 3	318. 38	324. 41	21. 17	19. 33
16	Tu.	10	6. 48	330. 37	336. 27	17. 38	15. 31
17	W.	11	7. 31	342. 11	347. 52	13. 15	10. 49
18	Th.	12	8. 13	353. 31	359. 9	8. 16	5. 36
19	F.	13	8. 56	4. 49	10. 31	2. 51 S	0. 2 S
20	Sa.	14	9. 39	16. 19	22. 13	2. 49 N	5. 41 N
21	Su.	15	10. 26	28. 16	34. 31	8. 32	11. 20
22	M.	16	11. 15	40. 58	47. 39	14. 2	16. 36
23	Tu.	17	12. 9	54. 36	61. 48	18. 58	21. 5
24	W.	18	13. 8	69. 17	76. 59	22. 55	24. 23
25	Th.	19	14. 11	84. 54	92. 57	25. 28	26. 8
26	F.	20	15. 14	101. 4	109. 11	26. 20	26. 4
27	Sa.	21	16. 15	117. 14	125. 7	25. 22	24. 14
28	Su.	22	17. 13	132. 49	140. 16	22. 43	20. 51
29	M.	23	18. 6	147. 30	154. 29	18. 41	16. 15
30	Tu.	24	18. 56	161. 14	167. 47	13. 38	10. 51



# VII. NOVEMBER 1779. [127]

Days of the Month.	Days of the Week.	Semidr. $\gamma$ at Noon.	Semidr. $\gamma$ at Mid-night.	Hor. Par. $\gamma$ at Noon.	Hor. Par. $\gamma$ at Midnight.	Propor. Lo- gar. at Noon.	Propor. Lo- gar. at Midn.
		M. S.	M. S.	M. S.	M. S.		
1	M.	16. 11	16. 10	59. 22	59. 19	4817	4821
2	Tu.	16. 8	16. 7	59. 14	59. 9	4827	4833
3	W.	16. 5	16. 3	59. 3	58. 55	4841	4850
4	Th.	16. 1	15. 58	58. 46	58. 36	4861	4874
5	F.	15. 55	15. 52	58. 25	58. 12	4887	4903
6	Sa.	15. 48	15. 44	57. 59	57. 44	4919	4938
7	Su.	15. 40	15. 35	57. 28	57. 11	4958	4980
8	M.	15. 30	15. 25	56. 54	56. 36	5002	5025
9	Tu.	15. 20	15. 15	56. 18	56. 0	5048	5071
10	W.	15. 11	15. 7	55. 44	55. 29	5091	5111
11	Th.	15. 3	14. 59	55. 14	55. 0	5130	5149
12	F.	14. 56	14. 53	54. 47	54. 39	5166	5177
13	Sa.	14. 51	14. 50	54. 31	54. 25	5187	5195
14	Su.	14. 49	14. 48	54. 22	54. 20	5199	5202
15	M.	14. 49	14. 50	54. 22	54. 26	5199	5194
16	Tu.	14. 52	14. 55	54. 33	54. 43	5185	5171
17	W.	14. 58	15. 2	54. 55	55. 10	5155	5136
18	Th.	15. 7	15. 12	55. 27	55. 45	5114	5090
19	F.	15. 17	15. 23	56. 6	56. 28	5063	5035
20	Sa.	15. 29	15. 36	56. 51	57. 15	5005	4975
21	Su.	15. 43	15. 49	57. 39	58. 3	4945	4915
22	M.	15. 55	16. 1	58. 26	58. 48	4886	4859
23	Tu.	16. 7	16. 11	59. 7	59. 25	4835	4813
24	W.	16. 16	16. 19	59. 40	59. 52	4795	4781
25	Th.	16. 21	16. 23	60. 1	60. 7	4770	4763
26	F.	16. 23	16. 23	60. 9	60. 8	4760	4761
27	Sa.	16. 23	16. 21	60. 6	60. 1	4764	4770
28	Su.	16. 19	16. 16	59. 54	59. 43	4778	4792
29	M.	16. 13	16. 10	59. 32	59. 20	4805	4820
30	Tu.	16. 6	16. 2	59. 6	58. 52	4837	4854

[128] NOVEMBER 1779. VIII.

Distances of  $\gamma$ 's Center from  $\odot$ , and from Stars east of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	The Sun.	86. 36. 4	84. 57. 38	83. 19. 14	81. 40. 53
2		73. 29. 53	71. 51. 51	70. 13. 52	68. 35. 58
3		60. 27. 32	58. 50. 4	57. 12. 41	55. 35. 24
4		47. 30. 39	45. 54. 3	44. 17. 34	42. 41. 11
10	Fomal- haut.	76. 56. 22	75. 26. 8	73. 56. 13	72. 26. 36
11		65. 3. 4	63. 35. 17	62. 7. 50	60. 40. 42
12		53. 30. 11	52. 5. 9	50. 40. 30	49. 16. 15
13		42. 21. 34	41. 0. 4	39. 39. 8	38. 18. 50
14		31. 48. 16			
14	$\alpha$ Arietis.	92. 36. 15	91. 9. 37	89. 43. 1	88. 16. 26
15		81. 3. 40	79. 37. 5	78. 10. 29	76. 43. 51
16		69. 30. 3	68. 3. 6	66. 36. 5	65. 8. 59
17		57. 52. 13	56. 24. 35	54. 56. 51	53. 29. 1
18	Aldeba- ran.	75. 34. 23	74. 2. 22	72. 30. 5	70. 57. 32
19		63. 10. 23	61. 36. 4	60. 1. 26	58. 26. 29
20		50. 26. 56	48. 50. 5	47. 12. 54	45. 35. 25
21		37. 23. 27	35. 44. 13	34. 4. 45	32. 25. 7
22		24. 4. 57			
22	Pollux.	67. 42. 28	65. 59. 3	64. 15. 18	62. 31. 13
23		53. 46. 8	52. 0. 16	50. 14. 7	48. 27. 43
24		39. 32. 24			
24	Regulus.	75. 47. 14	73. 59. 41	72. 11. 58	70. 24. 6
25		61. 22. 45	59. 34. 11	57. 45. 34	55. 56. 55
26		46. 53. 27	45. 4. 51	43. 16. 19	41. 27. 53
27		32. 27. 31	30. 40. 1	28. 52. 46	27. 5. 48
28	Spica $\mu$	72. 2. 10	70. 14. 50	68. 27. 40	66. 40. 40
29		57. 48. 31	56. 2. 42	54. 17. 7	52. 31. 45
30		43. 48. 27			
28	The Sun.	117. 4. 57	115. 24. 37	113. 44. 27	112. 4. 26
29		103. 47. 0	102. 8. 3	100. 29. 18	98. 50. 44
30		90. 40. 57	89. 3. 35	87. 26. 25	85. 49. 28
D. 1		77. 47. 50			

# IX. NOVEMBER 1779. [129]

Distances of J's Center from ☉, and from Stars east of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	The Sun.	80. 2. 36	78. 24. 20	76. 46. 8	75. 7. 59
2		66. 58. 7	65. 20. 22	63. 42. 40	62. 5. 4
3		53. 58. 13	52. 21. 9	50. 44. 13	49. 7. 22
4		41. 4. 56			
9	Fomalhaut.	83. 0. 3	81. 28. 43	79. 57. 39	78. 26. 52
10		70. 57. 17	69. 28. 16	67. 59. 33	66. 31. 9
11		59. 13. 54	57. 47. 26	56. 21. 20	54. 55. 35
12		47. 52. 25	46. 28. 59	45. 6. 2	43. 43. 31
13		36. 59. 12	35. 40. 17	34. 22. 8	33. 4. 45
14	α Arietis.	86. 49. 52	85. 23. 19	83. 56. 46	82. 30. 13
15		75. 17. 11	73. 50. 29	72. 23. 44	70. 56. 55
16		63. 41. 48	62. 14. 32	60. 47. 11	59. 19. 45
17		52. 1. 5			
17	Aldebaran.	81. 39. 56	80. 8. 54	78. 37. 39	77. 6. 8
18		69. 24. 42	67. 51. 34	66. 18. 8	64. 44. 24
19		56. 51. 14	55. 15. 38	53. 39. 43	52. 3. 29
20		43. 57. 37	42. 19. 29	40. 41. 5	39. 2. 24
21		30. 45. 17	29. 5. 20	27. 25. 16	25. 45. 8
22	Pollux.	60. 46. 48	59. 2. 4	57. 17. 3	55. 31. 44
23		46. 41. 6	44. 54. 14	43. 7. 10	41. 19. 53
24	Regulus.	68. 36. 4	66. 47. 54	64. 59. 37	63. 11. 14
25		54. 8. 13	52. 19. 30	50. 30. 48	48. 42. 7
26		39. 39. 32	37. 51. 16	36. 3. 11	34. 15. 16
27		25. 19. 9			
27	Spica ♀	79. 13. 2	77. 25. 6	75. 37. 18	73. 49. 40
28		64. 53. 51	63. 7. 13	61. 20. 47	59. 34. 33
29		50. 45. 36	49. 1. 40	47. 17. 2	45. 32. 37
27	The Sun.	110. 24. 35	108. 44. 55	107. 5. 26	105. 26. 8
28		97. 12. 22	95. 34. 13	93. 56. 16	92. 18. 30
29		84. 12. 43	82. 36. 12	80. 59. 52	79. 23. 45
30					



[130] NOVEMBER 1779. X.

Distances of  $\gamma$ 's Center from  $\odot$ , and from Stars west of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1		22. 7. 18	23. 52. 30	25. 37. 45	27. 23. 1
2	Pollux.	36. 9. 31	37. 54. 47	39. 40. 0	41. 25. 11
3		50. 10. 15	51. 55. 4	53. 39. 49	55. 24. 29
4		28. 10. 16	29. 52. 55	31. 35. 35	33. 18. 17
5	Regulus.	41. 51. 9	43. 33. 30	45. 15. 43	46. 57. 50
6		55. 26. 14			
11			39. 10. 57	40. 35. 15	41. 59. 19
12		48. 56. 42	50. 19. 38	51. 42. 23	53. 5. 0
13		59. 55. 46	61. 17. 32	62. 39. 13	64. 0. 47
14	The Sun.	70. 47. 25	72. 8. 34	73. 29. 42	74. 50. 47
15		81. 36. 11	82. 57. 20	84. 18. 32	85. 39. 48
16		92. 27. 12	93. 48. 59	95. 10. 55	96. 32. 58
17		103. 25. 38	104. 48. 43	106. 12. 2	107. 35. 33
18		114. 36. 40	116. 1. 40	117. 26. 56	118. 52. 29
16		79. 28. 20	80. 57. 26	82. 26. 41	83. 56. 3
17	Antares.	91. 25. 18	92. 55. 42	94. 26. 19	95. 57. 9
18		103. 34. 46			
18		60. 36. 44	61. 48. 26	63. 0. 52	64. 14. 0
19	$\alpha$ Aquilæ.	70. 29. 38	71. 46. 35	73. 4. 6	74. 22. 9
20		81. 0. 5			
20	Fomal-	47. 18. 33	48. 49. 29	50. 21. 5	51. 53. 18
21	haut.	59. 43. 20	61. 18. 59	62. 55. 7	64. 31. 45
22		72. 41. 51			
22	$\alpha$ Pegasi.	55. 38. 38	57. 8. 33	58. 30. 14	60. 10. 39
23		67. 57. 27	69. 32. 30	71. 8. 2	72. 44. 1
24		37. 19. 25	39. 0. 37	40. 42. 30	42. 25. 1
25	$\alpha$ Arietis.	51. 4. 28	52. 49. 26	54. 34. 40	56. 20. 6
26		34. 18. 9	36. 5. 45	37. 53. 28	39. 41. 18
27	Aldeba-	48. 41. 9	50. 29. 5	52. 16. 58	54. 4. 47
28	ran.	63. 2. 27	64. 49. 40	66. 36. 43	68. 23. 39
29		77. 15. 54			
29		33. 0. 46	34. 46. 54	36. 32. 52	38. 18. 40
30	Pollux.	47. 5. 5	48. 49. 49	50. 34. 21	52. 18. 42
D. 1		60. 57. 26			

# XI. NOVEMBER 1779. [131]

Distances of  $\gamma$ 's Center from  $\odot$ , and from Stars west of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Pollux.	29. 8. 19	30. 53. 38	32. 38. 56	34. 24. 14
2		43. 10. 20	44. 55. 24	46. 40. 25	48. 25. 22
3		57. 9. 5			
3	Regulus.	21. 20. 49	23. 2. 57	24. 45. 16	26. 27. 43
4		35. 1. 0	36. 43. 38	38. 26. 12	40. 8. 42
5		48. 39. 50	50. 21. 40	52. 3. 21	53. 41. 52
11	The Sun.	43. 23. 11	44. 46. 52	46. 10. 19	47. 33. 36
12		54. 27. 26	55. 49. 43	57. 11. 52	58. 33. 53
13		65. 22. 16	66. 43. 39	68. 4. 58	69. 26. 13
14		76. 11. 52	77. 32. 55	78. 53. 59	80. 15. 4
15		87. 1. 6	88. 22. 29	89. 43. 59	91. 5. 32
16		97. 55. 10	99. 17. 31	100. 40. 3	102. 2. 45
17		108. 59. 17	110. 23. 15	111. 47. 28	113. 11. 57
18		120. 18. 20			
16	Antares.	85. 25. 34	86. 55. 14	88. 25. 5	89. 55. 6
17		97. 28. 12	98. 59. 29	100. 31. 0	102. 2. 45
18	$\alpha$ Aquilæ.	65. 27. 50	66. 42. 21	67. 57. 29	69. 13. 15
19		75. 40. 45	76. 59. 51	78. 19. 28	79. 39. 32
20	Fomal- haut.	53. 26. 9	54. 59. 36	56. 33. 37	58. 8. 12
21		65. 8. 53	67. 46. 28	69. 24. 30	71. 2. 58
22	$\alpha$ Pegasi.	61. 42. 46	63. 15. 31	64. 48. 54	66. 22. 55
23		74. 20. 21			
23	$\alpha$ Arietis.	30. 42. 45	32. 20. 35	33. 59. 20	35. 38. 58
24		44. 8. 4	45. 51. 34	47. 35. 29	49. 19. 48
25		58. 5. 43			
25	Aldeba- ran.	27. 9. 48	28. 56. 31	30. 43. 31	32. 30. 44
26		41. 29. 15	43. 17. 12	45. 5. 10	46. 53. 9
27		55. 52. 31	57. 40. 10	59. 27. 42	61. 15. 8
28		70. 10. 26	71. 57. 3	73. 43. 31	75. 29. 48
29	Pollux.	40. 4. 19	41. 49. 47	43. 35. 4	45. 20. 16
30		54. 2. 51	55. 46. 48	57. 30. 33	59. 14. 5

[132] NOVEMBER 1779. XII.

Configurations of the SATELLITES of JUPITER  
at 6 o' th' Clock in the Morning.

1	.4			.3	⊙	.1		.2	
2				1.	⊙	2.		.3	
3		.4	2.		⊙	.1		.3	
4	2.0		.4.1		⊙			3.	
5				3.	⊙	.4	1.	2.	
6			3.	2.	.1	⊙		.4	
7			.3	.2	⊙	1.		.4	
8	1.0			.3	⊙		.2		.4
9				1.	⊙	2.	.3		.4
10			2.		⊙	.1		.3	.4
11				1.	.2	⊙		3.	.4
12	3.0				⊙		1.	2.4	
13			3.	.1	2.	⊙	4.		
14		.3	.2		⊙		1.		
15			.4	.3	.1	⊙	.2		
16					1.	⊙	.3	2.	
17	.4			2.		⊙	.1		.3
18	.4			1.	.2	⊙		3.	
19		.4			⊙	3.	.1	.2	
20		.4	3.	.1	⊙				2.0
21			3.	.2	.4	⊙	1.		
22			.3		.1	⊙	2.4		
23	1.0				⊙	.3	2.		.4
24				2.		⊙	.1	.3	.4
25				.2	1.	⊙		3.	.4
26					⊙	3.	.1	.2	.4
27	2.0			3.1.	⊙				.4
28			3.	.2	⊙		1.		.4
29			.3	.1	⊙	.2		.4	
30	3.0 4.0				⊙	1.	2.		



# I. DECEMBER 1779. [133]

Days of the Month.	Days of the Week.	Sundays, Holidays, &c.	Phases of the Moon. D. H. M.
1	W.		New Moon — 7. 10. 31
2	Th.		First Quarter — 15. 14. 54
3	F.		Full Moon — 22. 19. 52
4	Sa.		Last Quarter — 29. 10. 37
5	Su.	2d Sunday in Advent.	D. Other Phenomena.
6	M.	Nicholas.	1. ☾ c ☿ 15 <sup>h</sup> . 24'.
7	Tu.		3. ☾ x ☿ 23 <sup>h</sup> . 8'.
8	W.	Concept. of V. Mary.	5. ☾ x ☿ 18 <sup>h</sup> . 18'.
9	Th.		☾ λ ☿ 23 <sup>h</sup> . 26'.
10	F.		6. ♀ λ ♀ diff. Lat. 13'.
11	Sa.		7. ☉ eclipsed, invisible.
			9. ☾ φ ♀ Im. 4 <sup>h</sup> . 47'. *
			8' S. of ♀'s center.
			Em. not visible.
12	Su.	3d Sunday in Advent.	☾ ♀ 4 <sup>h</sup> . 44'.
13	M.	Lucy.	☾ σ ♀ 8 <sup>h</sup> . 40'.
14	Tu.		12. ☾ ε ♀ 12 <sup>h</sup> . 43'.
15	W.		14. ☾ 3 ad ♀ ☿ 18 <sup>h</sup> . 19'.
16	Th.	OSap. Camb.Ter. ends.	15. ☾ 33 x 18 <sup>h</sup> . 22'.
17	F.	Oxford Term ends.	18. ♂ ' ☿ diff. Lat. 56'.
18	Sa.		21. ♀ Stationary.
19	Su.	4th Sunday in Advent.	☉ enters ♀ at 9 <sup>h</sup> . 57'.
20	M.		22. ☾ 125 ♂ 5 <sup>h</sup> . 8'.
21	Tu.	St. Thomas.	☾ 132 ♂ Im. 7 <sup>h</sup> . 17'.
22	W.		* 10' S. of ♀'s cent.
23	Th.		Em. 7 <sup>h</sup> . 54'. * 15' S.
24	F.		23. ☾ ε ☿ Im. not vis. Em.
25	Sa.	Christmas-Day.	4 <sup>h</sup> . 5'. * 5' S. of ♀'s center.
26	Su.	1st Su aft. Christ. St. Steph.	24. ☾ x ☿ 2 <sup>h</sup> . 33'.
27	M.	St. John.	☾ 2 ad ♀ ☿ 11 <sup>h</sup> . 26'.
28	Tu.	Innocents.	26. ☾ u ☿ Im. 8 <sup>h</sup> . 4 <sup>1</sup> / <sub>2</sub> '. *
29	W.		16' N. of ♀'s cent.
30	Th.		Em. 8 <sup>h</sup> . 16 <sup>1</sup> / <sub>2</sub> '. * 15'
31	F.	Silvester.	North.
			27. ☾ ε ☿ 17 <sup>h</sup> . 58'.
			28. ☾ c ☿ 20 <sup>h</sup> . 53'.
			31. ☾ x ☿ 4 <sup>h</sup> . 25'.

[134] DECEMBER 1779. II.

Days of the Month.	Days of the Week.	Sun's Longitude.	Sun's Right Asc. in Time.	Sun's Declin. South.	Equat. of Time. Sub.	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	S.
1	W.	8. 9. 13. 20	16.30. 6. 8	21. 51. 40	10. 35. 2	23, 2
2	Th.	8. 10. 14. 15	16.34. 26. 6	22. 0. 43	10. 12. 0	23, 9
3	F.	8. 11. 15. 12	16.38. 47. 1	22. 9. 22	9. 48. 1	24, 5
4	Sa.	8. 12. 16. 11	16.43. 8. 2	22. 17. 34	9. 23. 6	25, 0
5	Su.	8. 13. 17. 11	16.47. 29. 8	22. 25. 21	8. 58. 6	25, 5
6	M.	8. 14. 18. 12	16.51. 52. 0	22. 32. 41	8. 33. 1	26, 1
7	Tu.	8. 15. 19. 14	16.56. 14. 8	22. 39. 35	8. 7. 0	26, 6
8	W.	8. 16. 20. 17	17. 0. 38. 0	22. 46. 2	7. 40. 4	27, 1
9	Th.	8. 17. 21. 21	17. 5. 1. 7	22. 52. 3	7. 13. 3	27, 5
10	F.	8. 18. 22. 25	17. 9. 25. 8	22. 57. 36	6. 45. 8	27, 9
11	Sa.	8. 19. 23. 30	17.13.50.3	23. 2. 41	6. 17. 9	28, 3
12	Su.	8. 20. 24. 36	17.18.15.2	23. 7. 20	5. 49. 6	28, 6
13	M.	8. 21. 25. 42	17.22.40.4	23. 11. 30	5. 21. 0	28, 9
14	Tu.	8. 22. 26. 49	17.27. 6. 0	23. 15. 13	4. 52. 1	29, 1
15	W.	8. 23. 27. 55	17.31.31.7	23. 18. 28	4. 23. 0	29, 3
16	Th.	8. 24. 29. 2	17.35.57.6	23. 21. 15	3. 53. 7	29, 5
17	F.	8. 25. 30. 9	17.40.23.7	23. 23. 34	3. 24. 2	29, 6
18	Sa.	8. 26. 31. 17	17.44.50.0	23. 25. 25	2. 54. 6	29, 7
19	Su.	8. 27. 32. 24	17.49.16.4	23. 26. 47	2. 24. 9	29, 9
20	M.	8. 28. 33. 32	17.53.42.9	23. 27. 41	1. 55. 0	30, 0
21	Tu.	8. 29. 34. 40	17.58. 9. 5	23. 28. 7	1. 25. 0	30, 0
22	W.	9. 0. 35. 48	18. 2.36.1	23. 28. 5	0. 55. 0	30, 0
23	Th.	9. 1. 36. 56	18. 7. 2. 7	23. 27. 34	0. 25. 0	29, 9
24	F.	9. 2. 38. 5	18.11.29.2	23. 26. 35	Ad: 4. 9	29, 8
25	Sa.	9. 3. 39. 14	18.15.55.7	23. 25. 8	0. 34. 7	29, 8
26	Su.	9. 4. 40. 23	18.20.22.1	23. 23. 12	1. 4. 5	29, 7
27	M.	9. 5. 41. 33	18.24.48.5	23. 20. 48	1. 34. 2	29, 5
28	Tu.	9. 6. 42. 43	18.29.14.6	23. 17. 56	2. 3. 7	29, 3
29	W.	9. 7. 43. 54	18.33.40.6	23. 14. 36	2. 33. 0	29, 2
30	Th.	9. 8. 45. 5	18.38. 6. 4	23. 10. 48	3. 2. 2	29, 0
31	F.	9. 9. 46. 17	18.42.31.9	23. 6. 32	3. 31. 2	28, 7

# III. D E C E M B E R 1779. [135]

Days.	Semidia- meter of the Sun.	Time of D <sup>o</sup> passing the Meridian.	Hourly Motion of the Sun.	Logarithm of the Sun's Distance.	Place of the Moon's Node.
	M. S.	M. S.	M. S.		S. D. M.
1	16. 17, 1	1. 10, 2	2. 32, 2	9. 993610	2. 1. 41
7	16. 17, 9	1. 10, 7	2. 32, 5	9. 993277	2. 1. 22
13	16. 18, 5	1. 11, 0	2. 32, 7	9. 992996	2. 1. 3
19	16. 19, 0	1. 11, 1	2. 32, 8	9. 992781	2. 0. 44
25	16. 19, 2	1. 11, 2	2. 32, 9	9. 992665	2. 0. 25

## ECLIPSES of the SATELLITES of J U P I T E R.

I. Satellite. Immersions.			II. Satellite. Immersions.			III. Satellite.		
Days	H. M. S.		Days	H. M. S.		Days	H. M. S.	
1	13. 14. 27		3	20. 24. 40		3	2. 24. 18	I.
3	7. 42. 6		7	9. 40. 3		3	4. 41. 40	E.
5	2. 9. 43		10	22. 55. 15		10	6. 19. 4	I.
6	20. 37. 19		14	12. 10. 24		10	8. 35. 18	E.
8	15. 4. 49		18	1. 25. 28		17	10. 13. 30	I.
10	9. 32. 24		21	14. 40. 27		17	12. 28. 35	E.
12	3. 59. 54		25	3. 55. 11		24	14. 7. 42	I.
13	22. 27. 25		28	17* 10. 7		24	16* 21. 44	E.
15	16* 54. 52					31	18* 2. 6	I.
17	11. 22. 21					31	20. 15. 2	E.
19	5. 49. 49							
21	0. 17. 19					IV. Satellite. Conj.		
22	18* 44. 46					8	4. 20	Inf.
24	13. 12. 12					16	14. 12	Sup.
26	7. 39. 43					24	23. 33	Inf.
28	2. 7. 6							
29	20. 34. 36							
31	15* 2. 9							



[136] DECEMBER 1779. IV.

Days.	Heliocen- tric Lon- gitude.	Heliocen- tric Lati- tude.	Geocen- tric Lon- gitude.	Geocen- tric La- titude.	Declina- tion.	Passage over Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.

MERCURY. Greatest Elong. 13°. Inf. of 30°. 7".

1	10. 9. 18	6. 57 S	8. 26. 6	2. 20 S	25. 45 S	1. 13
4	10. 19. 59	6. 58	9. 0. 21	2. 21	25. 49	1. 18
7	11. 1. 32	6. 44	9. 4. 29	2. 17	25. 40	1. 24
10	11. 14. 7	6. 10	9. 8. 20	2. 7	25. 19	1. 27
13	11. 27. 55	5. 12	9. 11. 45	1. 49	24. 46	1. 29
16	0. 13. 2	3. 48	9. 14. 28	1. 22	24. 3	1. 27
19	0. 29. 30	1. 59 S	9. 16. 11	0. 45 S	23. 14	1. 21
22	1. 17. 13	0. 10 N	9. 16. 29	0. 4 N	22. 23	1. 8
25	2. 5. 49	2. 23	9. 15. 4	1. 1	21. 35	0. 49
28	2. 24. 46	4. 24	9. 12. 2	1. 59	20. 57	0. 22
31	3. 13. 25	5. 54	9. 8. 6	2. 43	20. 30	23. 42

VENUS.

1	9. 3. 38	1. 6 S	8. 19. 33	0. 29 S	23. 32 S	0. 44
7	9. 13. 7	1. 37	8. 27. 6	0. 42	24. 8	0. 51
13	9. 22. 36	2. 5	9. 4. 38	0. 55	24. 18	0. 58
19	10. 2. 6	2. 29	9. 12. 9	1. 6	24. 0	1. 4
25	10. 11. 35	2. 50	9. 19. 40	1. 17	23. 17	1. 10

MARS.

1	11. 21. 54	1. 32 S	10. 12. 32	1. 25 S	18. 25 S	4. 31
7	11. 25. 39	1. 29	10. 17. 4	1. 20	17. 0	4. 23
13	11. 29. 24	1. 24	10. 21. 38	1. 13	15. 28	4. 15
19	0. 3. 8	1. 19	10. 26. 12	1. 7	13. 51	4. 6
25	0. 6. 50	1. 13	11. 0. 46	1. 2	12. 11	3. 57

JUPITER.

1	6. 12. 22	1. 19 N	6. 20. 13	1. 11 N	6. 49 S	20. 48
7	6. 12. 50	1. 19	6. 21. 14	1. 12	7. 11	20. 21
13	6. 13. 17	1. 19	6. 22. 12	1. 13	7. 31	19. 59
19	6. 13. 44	1. 19	6. 23. 5	1. 14	7. 50	19. 35
25	6. 14. 11	1. 19	6. 23. 56	1. 15	8. 8	19. 11

SATURN.

1	7. 29. 49	1. 58 N	8. 0. 40	1. 47 N	18. 34 S	23. 22
7	8. 0. 0	1. 58	8. 1. 21	1. 47	18. 42	22. 58
13	8. 0. 11	1. 57	8. 2. 2	1. 47	18. 50	22. 34
19	8. 0. 22	1. 57	8. 2. 43	1. 48	18. 58	22. 10
25	8. 0. 33	1. 57	8. 3. 24	1. 48	19. 6	21. 47

V. DECEMBER 1779. [137]					
Days of the Month.	Days of the Week.	Moon's Longitude at Noon.	Moon's Longitude at Midnight.	Moon's Latitude at Noon.	Moon's Latitude at Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
1	W.	5. 21. 28. 20	5. 23. 21. 31	4. 59. 36 N	4. 44. 58 N
2	Th.	6. 5. 11. 10	6. 11. 57. 8	4. 26. 23	4. 4. 16
3	F.	6. 18. 39. 35	6. 25. 18. 27	3. 38. 58	3. 10. 55
4	Sa.	7. 1. 53. 54	7. 8. 25. 57	2. 40. 33	2. 8. 21
5	Su.	7. 14. 54. 40	7. 21. 20. 12	1. 34. 49	1. 0. 14 N
6	M.	7. 27. 42. 33	8. 4. 1. 54	0. 25. 13 N	0. 9. 48 S
7	Tu.	8. 10. 18. 20	8. 16. 31. 48	0. 44. 21 S	1. 18. 8
8	W.	8. 22. 42. 34	8. 28. 50. 46	1. 50. 43	2. 21. 44
9	Th.	9. 4. 56. 26	9. 10. 59. 51	2. 50. 59	3. 18. 4
10	F.	9. 17. 1. 8	9. 23. 0. 36	3. 42. 44	4. 4. 49
11	Sa.	9. 28. 58. 31	10. 4. 55. 14	4. 24. 7	4. 40. 30
12	Su.	10. 10. 51. 3	10. 16. 46. 28	4. 53. 49	5. 3. 57
13	M.	10. 22. 41. 52	10. 28. 37. 49	5. 10. 50	5. 14. 29
14	Tu.	11. 4. 34. 48	11. 10. 33. 22	5. 14. 43	5. 11. 35
15	W.	11. 16. 34. 6	11. 22. 37. 37	5. 4. 58	4. 54. 57
16	Th.	11. 28. 44. 26	0. 4. 55. 14	4. 41. 30	4. 24. 40
17	F.	0. 11. 10. 28	0. 17. 30. 47	4. 4. 29	3. 41. 6
18	Sa.	0. 23. 56. 37	1. 0. 28. 24	3. 14. 34	2. 45.
19	Su.	1. 7. 6. 31	1. 13. 51. 15	2. 13. 1	1. 38. 32
20	M.	1. 20. 42. 38	1. 27. 40. 50	1. 2. 5 S	0. 24. 8 S
21	Tu.	2. 4. 45. 34	2. 11. 56. 31	0. 14. 44 N	0. 53. 54 N
22	W.	2. 19. 13. 6	2. 26. 34. 44	1. 32. 38	2. 10. 19
23	Th.	3. 4. 0. 23	3. 11. 29. 11	2. 46. 3	3. 19. 11
24	F.	3. 18. 59. 55	3. 26. 31. 26	3. 48. 55	4. 14. 43
25	Sa.	4. 4. 2. 34	4. 11. 32. 9	4. 36. 4	4. 52. 38
26	Su.	4. 18. 59. 6	4. 26. 22. 35	5. 4. 10	5. 10. 29
27	M.	5. 3. 41. 47	5. 10. 56. 5	5. 11. 39	5. 7. 50
28	Tu.	5. 18. 5. 4	5. 25. 8. 27	4. 59. 14	4. 46. 12
29	W.	6. 2. 6. 10	6. 8. 58. 10	4. 29. 5	4. 8. 19
30	Th.	6. 15. 44. 35	6. 22. 25. 38	3. 44. 19	3. 17. 35
31	F.	6. 29. 1. 39	7. 5. 32. 46	2. 48. 30	2. 17. 35

[138] DECEMBER 1779. VI.						
Days of the Month.	Days of the Week.	D's Age.	D's Pafs- age over Merid.	D's Right Ascen. at Noon.	D's Right Asc. at Midn.	D's De- clination at Noon.
			H. M.	D. M.	D. M.	D. M.
1	W.	25	19. 43	174. 10	180. 23	7. 58 N
2	Th.	26	20. 29	186. 31	192. 35	2. 1 N
3	F.	27	21. 15	198. 36	204. 37	3. 57 S
4	Sa.	28	22. 1	210. 39	216. 45	9. 38
5	Su	29	22. 48	222. 55	229. 11	14. 49
6	M.	30	23. 37	235. 32	242. 0	19. 16
7	Tu.	1	0	248. 34	255. 13	22. 46
8	W.	2	0. 28	261. 57	268. 43	25. 7
9	Th.	3	1. 20	275. 30	282. 16	26. 14
10	F.	4	2. 12	288. 58	295. 36	26. 4
11	Sa.	5	3. 1	302. 7	308. 30	24. 42
12	Su.	6	3. 48	314. 45	320. 52	22. 14
13	M.	7	4. 33	326. 50	332. 41	18. 51
14	Tu.	8	5. 16	338. 25	344. 4	14. 43
15	W.	9	5. 57	349. 39	355. 11	9. 59
16	Th.	10	6. 38	0. 43	6. 16	4. 48 S
17	F.	11	7. 19	11. 52	17. 33	0. 41 N
18	Sa.	12	8. 3	23. 22	29. 21	6. 17
19	Su.	13	8. 50	35. 30	41. 54	11. 48
20	M.	14	9. 41	48. 33	55. 30	16. 57
21	Tu.	15	10. 37	62. 45	70. 18	21. 21
22	W.	16	11. 39	78. 8	86. 12	24. 34
23	Th.	17	12. 44	94. 28	102. 49	26. 10
24	F.	18	13. 48	111. 10	119. 27	25. 54
25	Sa.	19	14. 50	127. 33	135. 27	23. 44
26	Su.	20	15. 47	143. 6	150. 27	19. 58
27	M.	21	16. 40	157. 33	164. 24	15. 0
28	Tu.	22	17. 29	171. 1	177. 27	9. 18
29	W.	23	18. 15	183. 43	189. 52	3. 18 N
30	Th.	24	19. 0	195. 56	201. 58	2. 45 S
31	F.	25	19. 45	207. 59	214. 1	8. 31
						11. 13



VII. D E C E M B E R 1779. [139]

Days of the Month.	Days of the Week.	Semidr. $\gamma$ at Noon.	Semidr. $\gamma$ at Mid-night.	Hor. Par. $\gamma$ at Noon.	Hor. Par. $\gamma$ at Midnight.	Proport. Log. at Noon.	Proport. Log. at Midn.
		M. S.	M. S.	M. S.	M. S.		
1	W.	15. 59	15. 55	58. 38	58. 23	4871	4890
2	Th.	15. 51	15. 46	58. 8	57. 53	4908	4927
3	F.	15. 42	15. 38	57. 38	57. 24	4946	4964
4	Sa.	15. 34	15. 30	57. 8	56. 53	4984	5003
5	Su.	15. 26	15. 22	56. 38	56. 23	5022	5041
6	M.	15. 18	15. 14	56. 8	55. 54	5060	5079
7	Tu.	15. 10	15. 7	55. 40	55. 27	5097	5114
8	W.	15. 3	15. 0	55. 14	55. 1	5130	5148
9	Th.	14. 57	14. 54	54. 50	54. 40	5162	5175
10	F.	14. 52	14. 50	54. 32	54. 25	5186	5195
11	Sa.	14. 48	14. 47	54. 19	54. 15	5203	5209
12	Su.	14. 46	14. 46	54. 13	54. 13	5211	5211
13	M.	14. 47	14. 48	54. 16	54. 20	5207	5202
14	Tu.	14. 50	14. 53	54. 27	54. 37	5193	5179
15	W.	14. 56	15. 0	54. 49	55. 4	5163	5144
16	Th.	15. 5	15. 10	55. 22	55. 41	5120	5095
17	F.	15. 16	15. 23	56. 3	56. 27	5067	5036
18	Sa.	15. 30	15. 37	56. 53	57. 20	5023	4968
19	Su.	15. 45	15. 52	57. 48	58. 16	4933	4898
20	M.	16. 0	16. 8	58. 44	59. 12	4864	4830
21	Tu.	16. 15	16. 21	59. 37	60. 0	4799	4771
22	W.	16. 26	16. 31	60. 20	60. 37	4747	4727
23	Th.	16. 35	16. 37	60. 50	60. 58	4711	4702
24	F.	16. 38	16. 38	61. 3	61. 3	4696	4696
25	Sa.	16. 37	16. 35	60. 58	60. 51	4702	4710
26	Su.	16. 32	16. 28	60. 39	60. 24	4724	4742
27	M.	16. 23	16. 17	60. 6	59. 47	4764	4787
28	Tu.	16. 12	16. 6	59. 26	59. 4	4812	4839
29	W.	16. 0	15. 54	58. 42	58. 20	4866	4893
30	Th.	15. 47	15. 42	57. 58	57. 36	4921	4949
31	F.	15. 37	15. 31	57. 15	56. 55	4975	5000

[140] DECEMBER 1779. VIII.

Distances of  $\gamma$ 's Center from  $\odot$ , and from Stars east of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	The Sun.	77. 47. 51	76. 12. 9	74. 36. 39	73. 1. 19
2		65. 7. 52	63. 33. 49	61. 59. 57	60. 26. 18
3		52. 40. 57	51. 8. 29	49. 36. 13	48. 4. 9
4		40. 26. 42	38. 55. 48		
9	Fomalhaut.	57. 13. 6	55. 46. 56	54. 21. 4	52. 55. 35
10		45. 53. 46	44. 30. 42	43. 8. 7	41. 46. 2
11	$\alpha$ Arietis.	96. 16. 28	94. 49. 26	93. 22. 28	91. 55. 35
12		84. 42. 12	83. 15. 41	81. 49. 11	80. 22. 45
13		73. 10. 59	71. 44. 41	70. 18. 23	68. 52. 4
14		61. 40. 23	50. 14. 0	58. 47. 35	57. 21. 9
15	Aldebaran.	79. 44. 21	78. 14. 35	76. 44. 38	75. 14. 29
16		67. 40. 32	66. 9. 1	64. 37. 15	63. 5. 13
17		55. 20. 54	53. 47. 8	52. 13. 4	50. 38. 40
18		42. 41. 55	41. 5. 35	39. 28. 57	37. 51. 59
19	Pollux.	29. 42. 55	28. 4. 25	26. 25. 46	24. 46. 57
20		59. 50. 56	58. 6. 46	56. 22. 11	54. 37. 10
21		45. 46. 8	43. 58. 46	42. 11. 3	40. 23. 0
22		31. 17. 57			
22	Regulus.	67. 32. 59	65. 43. 5	63. 52. 55	62. 2. 31
23		52. 47. 26	50. 55. 53	49. 4. 16	47. 12. 32
24		37. 53. 24	36. 1. 37	34. 10. 0	32. 18. 31
25		23. 4. 41			
25	Spica $\alpha$	76. 56. 41	75. 4. 54	73. 13. 16	71. 21. 49
26		62. 7. 34	60. 17. 24	58. 27. 31	56. 37. 54
27		47. 34. 24	45. 46. 42	43. 59. 23	42. 12. 27
28		33. 23. 54	31. 39. 30	29. 55. 39	28. 12. 21
29	The Sun.	19. 45. 28	18. 6. 51	16. 29. 25	14. 53. 18
27			120. 10. 8	118. 29. 38	116. 49. 26
28		108. 33. 17	106. 55. 2	105. 17. 7	103. 39. 32
29		95. 36. 42	94. 1. 9	92. 25. 55	90. 51. 1
30		83. 1. 24	81. 28. 27	79. 55. 48	78. 23. 27
31	J. 1	70. 46. 6	69. 15. 31	67. 45. 13	66. 15. 11
J. 1		58. 48. 54			

IX. DECEMBER 1779. [141]

Distances of J's Center from ☉, and from Stars east of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	The Sun.	71. 26. 14	69. 51. 20	68. 16. 38	66. 42. 9
2		58. 52. 51	57. 19. 35	55. 46. 30	54. 13. 38
3		46. 32. 15	45. 0. 35	43. 29. 6	41. 57. 49
9	Fomalhaut.	51. 30. 24	50. 5. 37	48. 41. 15	47. 17. 18
10		40. 24. 28			
10	α Arietis.	102. 5. 23	100. 38. 2	99. 10. 46	97. 43. 35
11		90. 28. 46	89. 2. 2	87. 35. 22	86. 8. 45
12		78. 56. 20	77. 29. 58	76. 3. 37	74. 37. 18
13		67. 25. 46	65. 59. 27	64. 33. 6	63. 6. 44
14		55. 54. 42			
14	Aldebaran.	85. 41. 47	84. 12. 39	82. 43. 22	81. 13. 57
15		73. 44. 8	72. 13. 35	70. 42. 48	69. 11. 47
16		61. 32. 55	60. 0. 21	58. 27. 29	56. 54. 21
17		49. 3. 58	47. 28. 56	45. 53. 35	44. 17. 55
18		36. 14. 44	34. 37. 8	32. 59. 18	31. 21. 14
19	Pollux.	23. 8. 1			
19		66. 43. 12	65. 0. 48	63. 17. 58	61. 34. 40
20		52. 51. 45	51. 5. 55	49. 19. 43	47. 33. 7
21	Regulus.	38. 34. 36	36. 45. 53	34. 56. 52	33. 7. 33
22		60. 11. 53	58. 21. 2	56. 30. 1	54. 38. 47
23		45. 20. 45	43. 28. 53	41. 37. 3	39. 45. 13
24	Spica ♀	30. 27. 12	28. 36. 8	26. 45. 19	24. 54. 50
25		69. 30. 33	67. 39. 28	65. 48. 37	63. 57. 59
26		54. 48. 33	52. 59. 30	51. 10. 48	49. 22. 26
27		40. 25. 55	38. 39. 45	36. 54. 2	35. 8. 45
28		26. 29. 37	24. 47. 18	23. 5. 50	21. 25. 13
29	The Sun.	13. 18. 35			
27		115. 9. 34	113. 30. 1	111. 50. 47	110. 11. 52
28		102. 2. 18	100. 25. 24	98. 48. 50	97. 12. 36
29		89. 16. 27	87. 42. 13	86. 8. 17	84. 34. 41
30		76. 51. 24	75. 19. 38	73. 48. 10	72. 16. 59
31		64. 45. 25	63. 15. 55	61. 46. 40	60. 17. 40



[142]      D E C E M B E R      1779.      X.

Distances of  $\gamma$ 's Center from  $\odot$ , and from Stars west of her.

Days.	Stars Names.	Noon.	3 Hours.	6 Hours.	9 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Regulus.	25. 4. 55	26. 46. 19	28. 27. 41	30. 9. 2
2		38. 34. 42	40. 15. 28	41. 56. 6	43. 36. 35
3		51. 56. 43	53. 36. 14	55. 15. 35	56. 54. 46
4		65. 8. 5	66. 46. 13	68. 24. 10	70. 1. 55
5	Spica $\mu$	24. 24. 42	25. 59. 11	27. 33. 44	29. 8. 22
6		37. 1. 10			
11	The Sun.	39. 47. 15	41. 8. 43	42. 30. 5	43. 51. 22
12		50. 36. 48	51. 57. 44	53. 18. 39	54. 39. 33
13		61. 23. 52	62. 44. 47	64. 5. 44	65. 26. 44
14		72. 12. 37	73. 34. 3	74. 55. 37	76. 17. 18
15		83. 7. 49	84. 30. 26	85. 53. 15	87. 16. 15
16		94. 14. 33	95. 38. 58	97. 3. 39	98. 28. 37
17		105. 37. 53	107. 4. 44	108. 31. 52	109. 59. 24
18		117. 22. 29	118. 52. 15	120. 22. 24	
16	$\alpha$ Aquilæ.	66. 49. 56	68. 3. 36	69. 17. 50	70. 32. 39
17		76. 54. 24	78. 12. 13	79. 30. 30	80. 49. 15
18	Fomal- haut.	54. 39. 32	56. 11. 29	57. 44. 0	59. 17. 7
19		67. 10. 57	68. 47. 18	70. 24. 9	72. 1. 30
20		80. 15. 38	81. 55. 52	83. 36. 34	85. 17. 43
21	$\alpha$ Arietis.	31. 32. 49	33. 11. 26	34. 51. 12	36. 32. 2
22		45. 8. 46	46. 54. 10	48. 40. 7	50. 26. 33
23	Aldeba- ran.	28. 28. 48	30. 18. 28	32. 8. 29	33. 58. 53
24		43. 14. 33	45. 6. 9	46. 57. 45	48. 49. 26
25		58. 7. 50	59. 59. 20	61. 50. 43	63. 41. 59
26		72. 55. 49			
26	Pollux.	28. 41. 16	30. 31. 34	32. 21. 39	34. 11. 32
27		43. 17. 19	45. 5. 40	46. 53. 45	48. 41. 30
28		57. 35. 34			
28	Regulus.	21. 45. 32	23. 29. 9	25. 12. 41	26. 56. 7
29		35. 31. 3	37. 13. 23	38. 55. 27	40. 37. 16
30		49. 2. 18	50. 42. 27	52. 22. 20	54. 1. 57
31		62. 15. 59	63. 53. 58	65. 31. 41	67. 9. 9
J. 1		75. 12. 48			

# XI. DECEMBER 1779. [143]

Distances of ☿'s Center from ☉, and from Stars west of her.

Days.	Stars Names.	12 Hours.	15 Hours.	18 Hours.	21 Hours.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	Regulus.	31. 50. 20	33. 31. 34	35. 12. 43	36. 53. 45
2		45. 15. 56	46. 57. 7	48. 37. 9	50. 17. 1
3		58. 33. 46	60. 12. 36	61. 51. 17	63. 29. 46
4		71. 39. 30			
4	Spica 𐆗	18. 9. 3	19. 42. 32	21. 16. 20	22. 50. 25
5		30. 43. 4	32. 17. 44	33. 52. 20	35. 26. 50
11	The Sun.	45. 12. 35	46. 33. 43	47. 54. 48	49. 15. 49
12		56. 0. 25	57. 21. 16	58. 42. 7	60. 2. 59
13		66. 47. 46	68. 8. 51	69. 30. 2	70. 51. 17
14		77. 39. 6	79. 1. 2	80. 23. 8	81. 45. 24
15		88. 39. 28	90. 2. 53	91. 26. 32	92. 50. 25
16		99. 53. 52	101. 19. 24	102. 45. 15	104. 11. 24
17		111. 27. 16	112. 55. 30	114. 24. 7	115. 53. 7
15	α Aquilæ.	62. 1. 26	63. 12. 36	64. 24. 25	65. 36. 52
16		71. 47. 59	73. 3. 50	74. 20. 13	75. 37. 3
17		82. 8. 26			
17	Fomal- haut.	48. 37. 46	50. 7. 17	51. 37. 26	53. 8. 12
18		60. 50. 47	62. 25. 1	63. 59. 48	65. 35. 6
19		73. 39. 22	75. 17. 43	76. 56. 33	78. 35. 51
20		86. 59. 17			
20	α Arietis.	25. 12. 32	26. 45. 19	28. 19. 39	29. 55. 31
21		38. 13. 54	39. 56. 30	41. 39. 52	43. 23. 59
22		52. 13. 25			
22	Aldeba- ran.	21. 15. 56	23. 3. 12	24. 51. 9	26. 39. 40
23		35. 49. 39	37. 40. 37	39. 31. 45	41. 23. 3
24		50. 41. 10	52. 32. 54	54. 24. 35	56. 16. 14
25		65. 33. 7	67. 24. 5	69. 14. 52	71. 5. 27
26	Pollux.	36. 1. 11	37. 50. 36	39. 39. 46	41. 28. 40
27		50. 28. 57	52. 16. 6	54. 2. 55	55. 49. 26
28	Regulus.	28. 39. 27	30. 22. 38	32. 5. 38	33. 48. 26
29		42. 18. 50	44. 0. 7	45. 41. 7	47. 21. 51
30		55. 41. 17	57. 20. 22	58. 59. 10	60. 37. 43
31		68. 46. 21	70. 23. 19	72. 0. 2	73. 36. 32

[144] DECEMBER 1779. XII.

Configurations of the SATELLITES of JUPITER  
at 6 o' Clock in the Morning.

1	I.O.	4.	2.	⊙	3.
2		4.	2.	⊙	3.
3		4.		⊙	1. 2. 3.
4	4.		1. 2. 3.	⊙	2.
5	4.	3.	2.	⊙	1.
6		4.	2.	⊙	2. 0.
7		4.	2.	⊙	1. 2.
8			2.	⊙	3.
9	I●		2.	⊙	4. 3.
10				⊙	1. 2. 3. 4.
11			1. 3.	⊙	2. 4.
12		3.	2.	⊙	1. 4.
13		3.	1. 2.	⊙	4.
14			3.	⊙	1. 2. 4.
15			1. 2.	⊙	3. 4.
16	I●		2.	⊙	4. 3.
17			4.	⊙	1. 2. 3.
18	3●	4.	1.	⊙	2.
19		4.	3. 2.	⊙	1.
20		3.	1. 2.	⊙	
21	4.		3.	⊙	1. 2.
22	4.		1.	⊙	3. 2●
23		4.	2.	⊙	1. 3.
24	I.O.	4.		⊙	2. 3.
25			1. 2.	⊙	3. 2.
26		1. 2.		⊙	1. 4.
27		3.	1. 2.	⊙	4.
28			3.	⊙	1. 2. 4.
29	2●		1.	⊙	3. 4.
30		2.		⊙	1. 3. 4.
31			1.	⊙	2. 3. 4.



# EXPLANATION and USE

OF THE

## ARTICLES

CONTAINED IN THE

### ASTRONOMICAL and NAUTICAL EPHEMERIS.

**I**T may be proper first to premise, that all the Calculations are made according to apparent Time by the Meridian of the Royal Observatory at Greenwich. They are likewise adapted to apparent Noon, except where they are otherwise distinguished, as the Eclipses and Configurations of Jupiter's Satellites, the Moon's Places, &c. computed for Midnight, and the Distances of the Moon from the Sun and Stars for every third Hour; which are all computed to the apparent Times set down.

Apparent Time is that deducted immediately from the Sun, whether from the Observation of his passing the Meridian, from his Altitude observed at a Distance from the Meridian, or from his observed Rising or Setting. This Time is different from that shewn by Clocks and Watches well regulated at Land, which is called equated or mean Time. This will be explained when we come to treat of the Equation of Time.

The Day is here supposed, according to the Method of Astronomers, to begin at Noon, or 12 Hours later than the civil Day of the same Denomination, and to be counted up to 24 Hours, or the succeeding Noon, when the next Day begins. Thus the Day of the Month and the Hour of the Day are the same in this Method as in the civil Account at Noon, and from Noon till Midnight; but from Midnight till Noon they

U

differ;

differ; for whereas in the civil Account a fresh Day is supposed to begin at Midnight, and the Hours to begin over again, in this Method the Day is still continued beyond Midnight, and the Reckoning of the Hours is continued up to 24. Thus the Distances put down to January 10, 15 Hours belong to January 11 at Three in the Morning by civil Reckoning.

There are 12 Pages for every Month. The first Column of the first Page of each Month contains the Day of the Month; the second, the Day of the Week expressed concisely by the initial Letter or Letters, *Su.* standing for Sunday, *M.* for Monday, *Tu.* for Tuesday, *W.* for Wednesday, *Th.* for Thursday, *F.* for Friday, and *Sa.* for Saturday: The third Column exhibits the Sundays and Festivals of the Church of England, and other remarkable Days: The last Column shews at Top the Moon's Phases, or the Times of new and full Moon, and of the first and last Quarter or two Quadratures with the Sun: Beneath are contained miscellaneous Phænomena, namely, Eclipses of the Sun and Moon, and Occultations of Planets or fixed Stars not less than the fourth Magnitude, by the Moon, as they should happen at Greenwich by the Tables; the Conjunctions of the Moon with all Stars not less than the fourth Magnitude, which can be Occultations any where on the Globe, between the Latitudes of  $60^{\circ}$ . North and  $40^{\circ}$ . South: The Conjunctions, Oppositions and Quadratures of the superior Planets with the Sun; and the Conjunctions and greatest Elongations of the inferior Planets with the Sun, the Entrance of the Sun into the several Signs, and any other remarkable Phænomena.

The Stars are expressed by Bayer's Characters of Reference. The Conjunction of the Moon or a Planet with a Star, is denoted by prefixing the Character of the Moon or Planet to that of the Star, the Time of the Conjunction being placed immediately after. The Case is the same with respect to the Occultation of a Star or Planet by the Moon, only this is further distinguished by the Addition of *Im.* or *Immersion*, to signify the Disappearance behind the Moon; and *Em.* or *Emerision*, to signify the Re-appearance of the same. Thus  $8^d \text{ } \gamma \text{ } \vee \text{ } 16^h \text{ } 22'$  signifies that the Moon will be in Conjunction with the Star  $\gamma \text{ } \vee$  on the Eighth Day at  $16^h \text{ } 22'$  exclusive of Parallax: And  $10^d \text{ } \gamma \text{ } \sqcap \text{ } \text{Imm. } 9^h \text{ } 14'$ , *Em. } 10^h \text{ } 23' signifies that the Moon will eclipse  $\sqcap$  on the 10th Day, the Immersion being at  $9^h \text{ } 14'$ , and at  $10^h \text{ } 23'$  apparent Time at Greenwich.*

The

The Occultations set down are those only visible at Greenwich; and the Circumstances will not differ very widely in most parts of the Kingdom; but in very distant Places they will differ very much, owing to the Change of the Moon's Parallax, or it may become no Occultation at all: The like may be said of Eclipses of the Sun.

Eclipses of the Sun, and Occultations of fixed Stars by the Moon, if observed in Places whose Latitude and Longitude are well determined, may be applied to the Correction of the Lunar Tables; but if made in Places whose Latitude only is well known, may be applied to the Determination of the Longitude of the Place; but for this Purpose an accurate Calculation must be made of the Moon's Parallaxes in Longitude and Latitude, which makes this Method of settling the Longitudes of Places, though a very accurate one, less convenient in Use for Persons not much versed in astronomical Calculations. However, this ought not to discourage Travellers or Mariners from endeavouring to make these Observations as often and as carefully as possible, when they shall happen to be at any Place whose Longitude they have Reason to think has not been at all or but indifferently determined; since the necessary Calculations may be made at any Time afterwards by themselves, at leisure, or referred to the Skill of Astronomers and Mathematicians.

Eclipses of the Moon are not liable to this Inconvenience; the Longitude of any Place, where an Eclipse has been observed, being deduced immediately by taking the Difference of the Time of the Observation and that set down in the Ephemeris, and converting it into Degrees, at the Rate of 15 to One Hour, &c. or more briefly by Table Pages 6, 7, 8, of the Tables requisite to be used with the Ephemeris. But as the Beginning or Ending of an Eclipse of the Moon cannot be generally observed nearer than One Minute, and sometimes Two or Three Minutes of Time, the Longitudes of Places cannot be certainly determined by this Method from a single Observation of the Beginning or End nearer than a Degree. It is unnecessary to mention that even this Point of Exactness will often be of great Service. If both the Beginning and End of the Eclipse be observed, a considerably greater Degree of Exactness will be attained.

The Conjunctions of the Moon with the Planets, or fixed Stars not less than the fourth Magnitude, which may prove Occultations in some inhabited Parts of the Globe, are evidently designed to instruct Mariners or Travellers to look out



frequently for such Observations; which if they happen to prove Occultations, and are carefully observed, will afford a certain Means of determining the Longitude of the Place of Observation.

The Days of the Oppositions, Quadratures, &c. of the Planets with respect to the Sun, are Times at which they ought to be observed in fixed Observatories, for settling the Elements of their Orbits by a Series of several Years Observations.

The Two first Columns of the Second Page of the Month contain the Day of the Month and Week as before; next follow the Sun's Longitude, right Ascension in Time, Declination, and the Equation of Time, with the Difference from Day to Day.

The Longitude of the Sun is made use of in most of the succeeding Calculations of the Ephemeris, and may serve either to verify them, or to make other similar Calculations at a different Time of the Day. Particularly it may serve, with the Help of the Moon's Longitude, to find the Distance of the Moon from the Sun at any Time, independent of the Distances contained in the Four last Pages of the Month. To find the Sun's Longitude at any Time different from Noon, Proportion must be made according to its daily Increase: Saying as  $24^h$ , is to the Hour from Noon reckoned by the Meridian of Greenwich, so is the daily Variation of the Sun's Longitude, to a fourth Number; which added to the Sun's Longitude at the preceding Noon, gives the true Longitude at the given Time.

If the Time given be that of a Meridian different from Greenwich, it must be first reduced thereto, by adding or subtracting the Difference of Longitude turned into Time (at the Rate of One Hour to  $15^\circ$ , and One Minute of Time to 15 Minutes, or more briefly by Pages 6, 7, and 8, of the requisite Tables) according as the Place is to the West or to the East of Greenwich. Example: Suppose any one should want to know the Sun's Longitude, January 19, 1767, at  $4^h. 35'$ . being in  $21^\circ 15'$ . Longitude East of Greenwich. The Difference of Longitude turned into Time by Table Page 6, is  $1^h. 25'$  which subtracted from  $4^h. 35'$ . because the Place is East of Greenwich, leaves  $3^h. 10'$ . for the Time reduced to the Meridian of Greenwich. The Sun's Longitude the preceding Noon is  $9^\circ. 29'. 18". 2''$ . and the following Noon is  $10^\circ. 6'. 19'. 4''$ . the Difference is,  $1^\circ. 1'. 2''$ . or  $61'. 2''$ . the daily Variation. Then say, as  $24^h$ . is to  $3^h. 10'$ , so is  $61'. 2''$  to  $8'. 3''$ . which added to  $9^\circ. 29'. 18". 2''$ . the Sun's Longitude on the preceding

preceding Noon, gives  $9^{\circ}.29'.26''.5''$  the Sun's Longitude at the Time given. In like Manner any other of the following Articles is to be found by the Help of the Ephemeris.

The Sun's Longitude serves also to compute the Aberration of the fixed Stars and Planets.

The Sun's right Ascension in Time is useful to the practical Astronomer in regular Observatories, who adjusts his Clocks by sidereal Time. It is also useful to him for converting apparent into sidereal Time; as suppose that of an Eclipse of Jupiter's Satellites, in order to know at what Time it may be expected to happen by his Clocks; For this Purpose, the Sun's right Ascension at the preceding Noon, together with the Increase of right Ascension from Noon, must be added to the apparent Time of the Phænomenon set down in the Ephemeris.

The Sun's right Ascension in Time serves also to compute the apparent Time of a known Star's passing the Meridian: Thus, subtract the Sun's right Ascension in Time at Noon from the Star's right Ascension in Time, the Remainder is the apparent Time of the Star's passing the Meridian nearly; from which the proportional Part of the daily Increase of the Sun's right Ascension for this apparent Time from Noon being subtracted, leaves the correct Time of the Star's passing the Meridian.

Hence the apparent Time may be found from an observed Altitude of a known fixed Star, suppose one contained Page 12 or 13 of the requisite Tables; as will be explained hereafter.

The Sun's right Ascension in Time is also useful for computing the Time of the Moon and Planets passing the Meridian, as will be shewn under their proper Articles.

The Sun's Declination is necessary to find the Latitude, whether at Sea or Land, from the Meridian Altitude observed; it is also requisite for finding the Latitude from Two Altitudes observed with the Interval of Time measured by a Watch; it serves for computing the Sun's Azimuth, having his Altitude and the Latitude of the Place given, in order to find the Variation of the Compass; it is required jointly with the Latitude of the Place and the Sun's horary Angle to compute his Altitude, if neglected to be observed at the Time of taking the Moon's Distance from the Sun for finding the Longitude, being useful to facilitate the Calculation of the Effect of Refraction and Parallax upon the Distance; it is also necessary to calculate the apparent Time from an observed Altitude of the Sun at a Distance  
from



from the Meridian, the Latitude being given; or to compute the Time of the Sun's Setting or Rising; which, though a less accurate Method than the former of obtaining the Time, may yet be useful when that cannot be had. For any of these Purposes, the Sun's Declination must be found to the Time given nearly reduced to the Meridian of Greenwich, making Proportion according to the daily Increase or Decrease, in like Manner as was shewn with respect to the Sun's Longitude.

The Equation of Time is a Correction, which added to or subtracted from the apparent Time (according to its Title at the Top of the Column) gives equated or mean Time, or that which should be shewn by a good Clock or Watch. Apparent Time is that which takes its Beginning from the Passage of the Sun's Centre over the Meridian of any Place; and had the Sun no Motion in the Ecliptic, or was his Motion reduced to the Equator or in right Ascension uniform, he would always return to the Meridian after equal Intervals of Time. But his apparent Motion in the Ecliptic being continually varying, and his Motion in right Ascension being rendered further unequal on account of the Obliquity of the Ecliptic to the Equator, from these Causes it arises that the Intervals of his Return to the Meridian become unequal, and the Sun will gradually become too slow or too soon to the Meridian for an equable Motion, such as that of Clocks and Watches ought to be.

This Retardation or Acceleration of the Sun's coming to the Meridian is called the Equation of Time, and is contained in the last Column but One of Page 2d; and when applied according to its Title to the apparent Time, or that deduced immediately from the Sun, gives the mean or equated Time, whence the Error of a Clock or Watch may be found, and, if required, it may be corrected.

If it is proposed to convert mean Time into apparent, this is done by a contrary Process, by applying the Equation of Time to the mean Time given, with its Title or Sign changed; *viz.* subtracting instead of adding, and adding instead of subtracting.

The Equation of Time being set down in the Ephemeris for the Noon at Greenwich, Proportion must be made according to the daily Difference, to find what it should be at any given Time reduced to the same Meridian, as in the preceding Articles. The last Column of this Page, containing the daily Differences of the Equation, is designed for this Purpose.

As



As often as it may be required to make any Calculations from astronomical Tables, and the Time given be apparent Time; it is necessary first to apply the Equation of Time thereto to convert it into mean Time, the Tables being disposed according to mean Motions. Thus the Articles contained in the Ephemeris answering to Noon were computed to 0<sup>h</sup>. increased, or 24 Hours diminished, by the Equation of Time: And the Moon's Places set down for Midnight were computed to 12<sup>h</sup>. increased or diminished by the Equation of Time.

What has been shewn concerning the Equation of Time chiefly respects the Astronomer, the Mariner having little to do with it in computing his Longitude from the Moon's Distances from the Sun and Stars observed at Sea with the Help of the Ephemeris, all the Calculations thereof being adapted to apparent Time, the same which he will obtain by the Altitudes of the Sun or Stars in the Manner hereafter prescribed.

But if Watches made upon Mr. John Harrison's or other equivalent Principles should be brought into Use at Sea, the apparent Time deduced from an Altitude of the Sun must be corrected by the Equation of Time, and the mean Time found compared with that shewn by the Watch, the Difference will be the Longitude in Time from the Meridian by which the Watch was set; as near as the Going of the Watch can be depended upon.

The Equation of Time was computed for the Ephemeris of 1767 from the Table, Page 3d of Mayer's Tables; but on account of that Table being made only to the nearest Second without Decimals, and the Neglect of the small Equations of the Sun, the Calculations of that Article in the Year 1767, cannot always be depended upon nearer than Two Seconds. For the Year 1768 and the following Years it will be computed in the strict Manner explained in my Remarks upon that Subject, in the *Philos. Transact.* Vol. liv. P. 342 for the Year 1764; namely, by taking the Difference of the Sun's true right Ascension, and his mean Longitude corrected by the Equation of the Equinoxes in right Ascension, and turning it into Time at the Rate of 1' to 15'. &c. The Equation of Time will be additive or subtractive as the Sun's true right Ascension is greater or less than his mean Longitude.

The Semidiameter of the Sun, Page 3d, is necessary to reduce the observed Altitude of his upper or lower Limb to that

of the Centre; also to reduce the observed Distance of the Moon's nearest Limb from the Sun's nearest Limb to the Distance of the Centres. It is also useful to Astronomers to verify or ascertain the Exactness of the Scale of their Micro-meters, by Comparison with the Measure of the Sun's horizontal Diameter. This Practice is particularly useful in solar Eclipses, when the Distance of the Cusps or the Verse Sine of the uneclipsed Part has been measured with the Micro-meter. The Semidiameters of the Sun in Mayer's Tables, on which all the Calculations respecting the Sun and Moon are made, suppose the Semidiameter at the mean Distance to be  $16'.2''$ , 8. which Mr. Mayer says he deduced from above 130 Observations taken with his Six Foot mural Quadrant, which seemed to him not ill adapted to the Purpose. It may not be amiss to take this Opportunity to remark, that the Quadrant here mentioned was given to the University of Göttingen by his late Majesty, and was made by Mr. John Bird after the Model of the Eight Foot mural Arch, which he finished for the Royal Observatory at Greenwich, and put up there in the Year 1750. Mr. Mayer made his Observations with his Six Foot mural Arch, from the Year 1756, to the Time of his Decease; with it he settled the mean Obliquity of the Ecliptic to the Beginning of the Year 1756, at  $23^\circ.28'.16''$ , which Dr. Bradley settled by his Observations made in the Years 1750 and 1751, at  $23^\circ.28'.18''$ . The Difference is agreeable to what ought to arise from the gradual Diminution of the Obliquity of the Ecliptic at the Rate of about  $\frac{1}{2}$  a Second in a Year. The same Instrument he also used in settling the Elements of his solar Tables; and it is most probable that with the same he settled his Table of Refractions at the End of his solar Tables; the Agreement of this Table with Dr. Bradley's, see Page 2d of requisite Tables (being both suited to the same Temperature of the Air) is so great, that they seem rather like One and the same than two different Tables.

The Time of the Sun's Sediumeter passing the Meridian, serves to reduce an Observation of a Transit of the preceding or subsequent Limb over the Meridian to that of the Centre, when only One was observed. It signifies a Portion of apparent Time, or even mean Time, the Difference being absolutely insensible upon so small an Interval. It is found thus: Increase the Sun's Semidiameter in the Ratio of the Cosine of his Declination to the Radius, to find his Semidiameter in right Ascension, which turned into Time at the Rate of  $1'$ . to  $15''$ . and  $1''$ . to  $15''$ . gives the Time

Time required. The Sun's Semidiameter in right Ascension is readily found by adding the Log. Cosine of his Declination to the logistick Logarithm of his Semidiameter, the Sum is the logistick Logarithm of his Semidiameter in right Ascension ; which divided by 15 gives the Time of his Semidiameter passing the Meridian. If the Clock by which the Observation is made be regulated according to sidereal Time, this Quantity must be increased in the Ratio of 365 to 366, if great Precision is required.

From the Time of the Sun's Semidiameter passing the Meridian may be also found the Time of its passing the horizontal or vertical Wire of a Quadrant or Sextant, which on some Occasions may have its Use.—The hourly Motion of the Sun is useful in computing solar and lunar Eclipses; also in correcting the assumed Longitude of the Ship, in order to find the Time from an Observation of the Distance of the Moon from the Sun, independent of the Distances contained in the Nautical Ephemeris; See British Mariner's Guide, Page 49, and Table at the End of the same, Page 25, which is also copied at Page 14 of Requisite Tables. The Logarithm of the Sun's Distance is useful in the Calculation of the Places of the Planets and Comets. The Place of the Moon's Node signifies its mean Longitude, and is necessary for finding the Equation of the equinoctial Points both in Longitude and right Ascension, the Equation of the Obliquity of the Ecliptic, and the Deviations of the fixed Stars in right Ascension and Declination.

The Eclipses of Jupiter's Satellites are well known to afford the readiest, and for general Practice the best Method of settling the Longitudes of Places at Land; and it is by their Means principally that Geography has been so much reformed within a Century past, and the Position of the most distant Places determined to equal Accuracy with the nearest. It was hoped that some Means might be found of using proper Telescopes on Shipboard to observe these Eclipses, and could this be effected, it would be of great Service in ascertaining the Longitude of a Ship from Time to Time. In my Voyage to Barbadoes under the Direction of the Commissioners of Longitude, I made a full Trial of the late Mr. Irwin's Marine Chair proposed for this Purpose, but found it totally impracticable to derive any Advantage from the Use of it; and, considering the great Power requisite in a Telescope for making these Observations well, and the Violence as well as



Irregularities of the Motion of a Ship, I am afraid the complete Management of a Telescope on Shipboard will always remain among the Desiderata. However, I would not be understood to mean to discourage any Attempt founded upon good Principles to get over this Difficulty.

The Telescopes proper for observing the Eclipses of Jupiter's Satellites, are common refracting Telescopes, from 15 to 20 Feet, reflecting Telescopes of 18 Inches or Two Feet, and Telescopes of Mr. Dollond's Construction with Two Object Glasses from Five to 10 Feet; or, which are still more convenient, those of  $3\frac{1}{2}$  Feet, which he has lately found a Method of constructing with Three Object Glasses, which are as manageable as reflecting Telescopes, and perform as much as those which he makes of 10 Feet with Two Object Glasses.

The Eclipses of Jupiter's Satellites are observed by Astronomers at Land, as well in order to provide Materials for improving the Theories and Tables of their Motions, as for the sake of Comparison with the corresponding Observations which may be made by Persons in different Parts of the Globe, whereby the Longitude of such Places will be accurately ascertained. It is indeed to be lamented that Persons who visit distant Countries are not more diligent to multiply Observations of this Kind, for want of which, the Observations made by Astronomers on Shore lose Half their Use, and the Improvement of Geography seems to be at a Stand. But it is to be hoped that an Emulation will spring up among those who may have Opportunities of rendering so useful a Service to the Public, to incite them to watch diligently for the Occasions of observing these Eclipses carefully, particularly of the First and Second, which are most exact for the Purpose. The Eclipses carefully calculated and set down in the Ephemeris, will serve to advertise them and Observers in general of the Times when they should attend to these Observations. The Person who shall be under any Meridian different from Greenwich, must turn his Difference of Longitude into Time: See Table Page 6, 7, and 8, and add it to or subtract it from the Time of the Eclipse set down in the Ephemeris, according as he is to the East or West of Greenwich, to find the apparent Time at which the Eclipse will happen at his Meridian, nearly. He must further take care to regulate his Watch or Clock by apparent Time, or at least to know the Difference, as well in order to apprise him of the Time to look out for the

the Eclipse, as for ascertaining the apparent Time exactly at which he shall observe it. Equal Altitudes of the Sun or Stars taken with an astronomical Quadrant afford the best Means of regulating Clocks and Watches for occasional Observations; or they may be taken with a Hadley's Quadrant, by Reflection from a Basin of Water or Quicksilver, or from the Horizon of the Sea, if the Observer has an open Prospect, and is not elevated above 5 or 600 Feet above the Level of the Sea. But, if Opportunity does not admit of taking equal Altitudes, the Time may be determined from One Altitude taken in any of the Methods above mentioned, at least Two or Three Points of the Compass distant from the Meridian, but the nearer to the East or West the better, the Latitude of the Place being known, or being found by Observations of the Meridian Altitude of the Sun or Stars made on Purpose. It will be better to take several Altitudes in order to take a Mean of the Results for greater Certainty. The Manner of computing the apparent Time from the Altitude of the Sun or a Star will be observed, when we come to treat of the Method of finding the Longitude by the Observations of the Distance of the Moon from the Sun and Stars by the Help of the Ephemeris.

The Observer being in a Place whose Longitude is well known, should be settled at his Telescope Three Minutes before the expected Time of an Immersion of the first Satellite; Six or Eight Minutes before that of the second and third Satellites; and a Quarter of an Hour or more before that of the fourth Satellite; chiefly on account of the Uncertainty of their Theories; but, if the Longitude of the Place is very uncertain, he must begin to look out for the Eclipse proportionably sooner: Thus, if the Longitude of the Place is uncertain to 30 Degrees, answering to 12 Minutes of Time, he ought to fix himself to his Telescope 12 Minutes sooner than is mentioned above. Nevertheless, when he has observed One Eclipse of any Satellite, and thereby found the Error of the Tables, he may allow the same Correction to the Calculations of the Ephemeris for several Months, which will advertise him very nearly of the Time of expecting the Eclipses of the same Satellite, and dispense with his attending so long.

The Immersions signify the Instant of the Disappearance of the Satellite by entering into the Shadow of Jupiter; and the Emissions signify the first Instant of its Appearance at com-



ing out of the same. They generally happen when the Satellite is at some Distance from the Body of Jupiter, except near the Opposition of Jupiter to the Sun, when the Satellite approaches nearer to his Body. Before the Opposition of Jupiter to the Sun the Immersions and Emersions happen on the West Side of Jupiter, and after the Opposition on the East Side; but if an astronomical Telescope be used, which reverses Objects, the Appearances will be directly the contrary. Before the Opposition, the Immersions only of the first Satellite are visible; and after the Opposition, the Emersions only. The same is generally the Case with respect to the second Satellite; both the Phenomena of the same Eclipse are frequently observable in the Two outer Satellites. The Immersions and Emersions marked with an Asterisk in the Ephemeris are those visible at Greenwich.

To know if an Eclipse will be visible in any Place, find if Jupiter is  $8^{\circ}$ , or  $10^{\circ}$ , above the Horizon of the Place, and the Sun as much below it. This may be done near enough by a celestial Globe: Otherwise, the Time of the Sun's Rising and Setting may be found for any Latitude by a Table of semi-diurnal Arcs, contained in the popular Book called the Mariner's Compass Rectified, and many other Books; the Time of Jupiter's Rising and Setting may also be found from the Time of his passing the Meridian and Declination set down in the Ephemeris, with the Help of the same Table of semi-diurnal Arcs; adding or subtracting the semi-diurnal Arc answering to the same Declination of the Sun: Remembering always that if Jupiter's Declination and the Latitude of the Place are of the same Denomination, the semi-diurnal Arc will be more than Six Hours, and if they are of contrary Denominations, will be less than Six Hours.

The Immersion or Emersion of any Satellite being carefully observed in any Place according to apparent Time, the Longitude from Greenwich is found immediately by taking the Difference of the Observation from the corresponding Time shewn in the Ephemeris, which must be turned into Degrees, &c. by Table Page 6, 7, and 8; and will be East or West of Greenwich, as the Time observed is more or less than that of the Ephemeris.

Example; Suppose an Emersion of the first Satellite should be observed at the Cape of Good Hope, May 9, 1767, at  $10^h.46'.45''$  apparent Time: The Time by the Ephemeris being



being  $9^h. 33'. 12''$ . the Difference is  $1^h. 13'. 33''$ . whence by Table Page, 6, 7, and 8, the Longitude of the Cape should be  $18^\circ. 23'. 15''$ . East of Greenwich, because the Time supposed to be observed at the Cape is more than that of the Ephemeris.

It may not be useless here to observe, that the Longitude of the Cape of Good Hope  $1^h. 13'. 33'' = 18^\circ. 23'. 15''$ . set down in the British Mariner's Guide, is that of the Town; the Latitude also belongs to the same; being both determined from the Observations of Messrs. Mason and Dixon, who went thither under the Direction of the Royal Society, and observed the Transit of Venus in the Year 1761. Hence, by the Help of the Charts, I find the Longitude of the Cape Point or Promontory  $18^\circ. 45'$ . East of Greenwich, and its Latitude  $34^\circ. 30'$  S. the Longitude of Cape Falso,  $19^\circ. 15'$ . E. and its Latitude  $34^\circ. 34'$  S. If these Determinations of the Situations of the Cape Point and Cape Falso are in any Respect uncertain, it arises from the Imperfection of the Charts I was obliged to make use of, in reducing the Longitude and Latitude from the Cape Town to the Two mentioned Points: For from the near Agreement of the Abbé de la Caille's Observations with those of Messrs. Mason and Dixon, it is probable that the Situation of few Places is better determined than that of the Cape Town: But if any one has Possession of any Manuscript or printed Charts of these Parts that he thinks may be depended upon, or has any Opportunity of determining the Points in Question relatively to each other from the Comparison of several Journals of Ships. he may perhaps fix these Places with more Certainty than is here pretended to.

It is to be observed that a correspondent Observation of an Eclipse of a Satellite of Jupiter, made under a well-known Meridian, is to be preferred to the Calculations of the Ephemeris for comparing with an Observation made in a Meridian whose Longitude is required; but if no corresponding Observation can be obtained, as is frequently the Case, it will be best to find what Correction the Calculations of the Ephemeris require by the nearest Observations to the given Time that can be obtained; which Correction, applied to the Calculation of the given Eclipse in the Ephemeris, renders it almost equivalent to an actual Observation.

The Longitudes and Latitudes of the Planets, Page 4, serve to know where to look for them in the Heavens, and  
when

when their Places may be conveniently settled by comparing them with fixed Stars by the Help of a Micrometer in a Telescope. They also shew when they are in the most important Points of their Orbits, where it is most material to observe them. They also serve to enable Persons less skilled to distinguish them from the fixed Stars. Their Declinations and apparent Time of passing the Meridian are particularly useful to Astronomers who are furnished with Quadrants and Transit Instruments well fixed in the Meridian, in setting their Instruments for observing their right Ascensions and Declinations.

The apparent Time of a Planet's passing the Meridian may be computed thus; the Planet's right Ascension being calculated from its Longitude and Latitude, and turned into Time, subtract the Sun's right Ascension at Noon in Time from it, to find the Time of the Planet's passing the Meridian nearly, which call  $T$ ; take the Difference of the  $\odot$  and Planet's daily Variations in right Ascension in Time; if the Planet is progressive in right Ascension, or the Sun if it is retrograde, which call  $X$ ; then say, by the Rule of Proportion;

As  $24^h \mp X : T :: X : e$  and  $T \pm e$  will be the correct Time of the Planet's passing the Meridian. The upper Signs are to be used both to  $X$  and  $e$  if the Planet's progressive Motion in right Ascension be greater than that of the Sun; in any other Case the lower Signs are to be made use of.

But perhaps it may be found more readily by continual Approximation as follows: Take the proportional Part of the Difference or Sum of the  $\odot$  and Planet's daily Motion in right Ascension, answering to the Time of the Planet's passing the Meridian, found nearly, in Proportion to  $24^h$ , and take a further like proportional Part of this proportional Part; and again of this last, and so on as far as is necessary. The Sum of all these proportional Parts added to the Time of the Planet's passing the Meridian found nearly, if the Planet's progressive Motion in right Ascension is greater than that of the Sun, otherwise subtracted, gives the apparent Time of the Planet's passing the Meridian.

Example: Let it be required to find the Time of the Moon's passing the Meridian, July 1, 1767.

The Sun's right Ascension in Time July 1st is,  $6^h.40'.25''$ , and July 2d,  $6^h.44'.33''$ , by the Ephemeris. Therefore his daily Motion in right Ascension is  $4'.8''$ . The Moon's right Ascension July 1st at Noon by the Ephemeris, is  $159^\circ.2'$  answering to  $10^h.36'.8''$ , of Time, and July 2d is,  $169^\circ.39'$  an-  
swering

swering to  $10^h. 18'. 36''$ . The Difference is,  $42'. 28''$ . of Time, from which  $4'. 8''$ . being subtracted leaves  $38'. 20''$ . Subtract  $6^h. 46'. 25''$ . the Sun's right Ascension July 1st, at Noon from  $10^h. 36'. 8''$ . the Moon's right Ascension the same Noon, the Remainder  $3^h. 55'. 43''$ . is the Approximate Time of the Moon's passing the Meridian. The proportional Part of  $38'. 20''$  answering to this, is  $6'. 17''$  and the proportional Part of  $6'. 17''$ . is  $5''$ ; therefore  $6'. 17''$  and  $9''$  or  $6'. 26''$  added to  $3^h. 55'. 43''$  give  $4^h. 2'. 9''$ , the apparent Time of the Moon's passing the Meridian. In the Ephemeris it is  $4^h. 2'$ . It may also be computed by taking the Difference of the Moon's right Ascension at Noon and Midnight, but then Half the Sun's daily Variation in right Ascension must be made use of, and Proportion must be made for 12 instead of 24 Hours: And if the Moon passed the Meridian after Midnight, the Sun's right Ascension at Midnight must be used, which is a Mean between his right Ascensions on the preceding and subsequent Noon. For the Planet's, it will be sufficient to take the first proportional Part only.

The Configurations of Jupiter's Satellites, Page 5, exhibit the apparent Positions of the Satellites with respect to each other, and to Jupiter at such an Hour of the Evening or Night as they are most likely to be observed, and serve to distinguish the Satellites from one another. Jupiter is distinguished by the Mark  $\odot$ , and the Satellites by Points with Figures annexed, the Figure 1. signifying the Satellite, 2 the second Satellite, &c. When the Satellite is approaching towards Jupiter, the Figure is put between Jupiter and the Point; and when the Satellite is receding from Jupiter, the Figure is put on the other Side of the Point. The Satellites are in the superior Parts of their Orbits, or furthest from the Earth, when they are marked to the right Hand or West of Jupiter approaching him; or to the left Hand or East of Jupiter receding from him; but are in the inferior Part of their Orbits, or nearest to the Earth, when they are marked to the right Hand or West of Jupiter receding from him, or to the left or East of Jupiter approaching him. The Cypher 0. sometimes annexed to the Figure of the Satellite towards the Margin, signifies that it is invisible on the Face of Jupiter; and the black Mark  $\bullet$ , signifies that it is invisible, being eclipsed in Jupiter's Shadow, or behind Jupiter, and eclipsed by his Body.

The 7th and 5 following Pages of each Month contain the Moon's Place, and all the Circumstances relating to her Motions,



tions, and her Distances from the Sun and proper Stars, from which her Distance should be observed for finding the Longitude at Sea. The Longitudes, Latitudes, and Declinations of the Moon, and Time of her passing the Meridian, afford the like Uses with the same Circumstances of the Planetary Motions, and many more besides. For the sake of greater Precision, the Moon's Longitude, Latitude, Right Ascension, Declination, Semidiameter, horizontal Parallax, with its logarithmic or proportional Logarithm, are computed twice a Day, to Noon and Midnight, and may readily be inferred to any intermediate Time with the greatest Exactness.

Example: Let it be required to find the Moon's Longitude and Latitude, &c. July 16, 1767, at 16<sup>h</sup>. 22'. 16". First to find the Longitude. The Moon's Longitude, July 16, at 12<sup>h</sup>. is 0°. 6'. 40". 25". and July 17 at Noon, 0°. 13'. 47". 24". the Difference 7°. 7'. 23". is the Moon's Motion in 12 Hours; say then, by the Rule of Proportion,

As 12<sup>h</sup>. is to 4<sup>h</sup>. 22'. 16". (the Excess of 16<sup>h</sup>. 22'. 16". above 12<sup>h</sup>.) so is 7°. 7'. 23". to 2°. 35'. 41". which added to 0°. 6'. 40". 25". the Moon's Longitude at 12<sup>h</sup>. gives 0°. 9'. 16'. 6". the Moon's Longitude nearly; but this must be corrected on account of the Moon's unequal Motion in 12 Hours, by Page 11 of Requisite Tables; for this Purpose take out of the Ephemeris the Two Longitudes of the Moon next preceding the given Time, and the Longitudes immediately following it, and set them down in Order one after another, as follows.

	1st Diff.	2d Diff.
July 16, Noon 11. 29. 29. 34.	7. 10. 51.	1. "
Midnight 0. 6. 40. 58.	7. 7. 23.	3. 28.
17, Noon 0. 13. 47. 24.	7. 3. 39.	3. 44.
Midnight, 0. 20. 51. 27.		

Take their Differences, 0°. 10'. 51", 7°. 7'. 23", 7°. 3'. 39", take the Differences of these Differences, or the 2d Differences, 3'. 28". 3'. 44". and take their Mean which is 3'. 36". Now look for the Correction in Page 11 of Requisite Tables answering to 4<sup>h</sup>. 22' after Midnight, found on the Side, and 3'. 36" at Top, 21" will be found under 3'. and 28" under 4'. the the Difference is 7". when 36" will require 4", and the Correction sought is 21" + 4" = 25", which, according to the Remark at the Bottom of the Table, must be added (be-  
cause

cause the Motion in 12 Hours or first Differences are decreasing to  $0^{\circ}. 9'. 16''. 6''$ , the Moon's Longitude found by even Proportion; whence the Moon's true Longitude is  $0^{\circ}. 9'. 16''. 31''$ , and is as correct as the Longitudes from which it is deduced.

N. B. If the first Differences of the Four Longitudes of the Moon taken out first increase and then decrease, or, vice versa, first decrease and then increase, take Half the Difference of the Two second Differences for the Mean second Difference, with which take the Correction from Page 11, and add or subtract it as the First first Difference is greater or less than the Third first Difference.

To find the Moon's Latitude. Take out of the Ephemeris the Two Latitudes preceding and Two following the given Time, and set them down in Order, and take their first and second Differences, and the Mean of the Two second Differences; find the proportional Part of the Middle first Difference answering to the Hours and Minutes, &c. of the given Time after Noon or Midnight; which correct in the following Manner: Entering Table Page 11 with the Hour from Noon or Midnight on the Side, and the Mean second Difference at Top, take out the corresponding Number of Seconds, which added to or subtracted from the proportional Part found above, according as the Motion in 12 Hours or first Differences are decreasing or increasing; or, more generally, according as First first Difference is greater or less than Third first Difference, gives the proportional Part corrected; which now added to or subtracted from the Moon's Latitude at the preceding Noon or Midnight, as the Latitude in these 12 Hours is increasing or decreasing, gives the Moon's Latitude correct.

Example: The Moon's Latitude is required, July 16, 16<sup>h</sup>. 22'. 16''.

	D's Lat. by the Ephem.	1st Dif.	2d Dif.	Mean of 2d Dif.
	0' "			
July 16. Noon	4 31 10 N.	18 26	1' "	' "
Midnight	4 49 36	13 50	4 36	4 40
17 Noon	5 3 26	9 6	4 44	
Midnight	5 12 32			

The Moon's Latitude July 16 at Midnight being  $4^{\circ} 49' 36''$  N. and the Motion in the next 12 Hours being  $13' 50''$ . say by Proportion,

As  $12^h$  is to  $4^h 22' 16''$ . so is  $13' 50''$  to  $5' 2''$ ; but this must be corrected by adding  $33''$ . the Correction from Page 11. answering to the Hour  $4^h 22'$ . and the Mean second Difference  $4' 40''$ . because the first Differences are decreasing, or rather because the first of them  $18' 26''$ . is greater than the last of them  $9' 6''$ . therefore the proportional Part corrected is  $5' 2'' + 33'' = 5' 35''$ . which added to  $4^{\circ} 49' 36''$ . gives  $4^{\circ} 55' 11''$  N. the Moon's Latitude correct.

Remarks on some Circumstances necessary to be attended to, in order to obtain and apply the Correction of second Differences rightly in computing the Moon's Latitude.

I. If the Moon's Latitude taken out of the Ephemeris for Noon and Midnight changes its Denomination from North to South or from South to North, the Sum of the Two Latitudes of contrary Denominations, where the Change happens, is to be accounted the first Difference in that Place.

II. If the Three first Differences first increase and then decrease, or vice versa, first decrease and then increase, Half the Difference of the Two second Differences is to be taken for the Mean second Difference.

III. If the Series of Four Latitudes taken out should first increase and then decrease about the Moon's greatest Latitudes, take the Sum of the Two first Differences standing on each Side of the greatest Latitude for the second Difference in that Place; correct the Moon's Latitude at Noon or Midnight by the simple proportional Part first found; and to the Latitude so corrected, add always in this Case the Correction from Table Page 11, answering to the Mean of the Two second Differences.

Before I quit this Subject of Interpolation by second Differences, I shall point out another Method, by which the same End may be obtained more readily; and with fewer Rules, by those who are well acquainted with algebraical Subtraction and Addition, and the Manner of applying the Signs in those Operations. Subtract each Latitude from the following for the first Differences, to which prefix the Sign — if the Latitudes decrease; and subtract each first Difference, thus found, from the following one of the same Order for the second Differences. Half the Sum of the Two second Differences



ferences standing on each Side of the Interval to be interpolated, is to be accounted the Mean second Difference; the Correction corresponding to it by Table Page 11, is to be applied always with the contrary Sign.

These Operations are to be performed, and the Signs to be applied as in algebraic Subtraction and Addition. Note further, if the Four given Latitudes change their Denomination, call the second Latitude  $+$ , and those of a contrary Denomination  $-$ .

The Moon's Declination may be found at any Hour in the same Manner as her Latitude; but as the Correction arising from second Differences will never exceed  $2\frac{1}{2}$ , this may be neglected on most Occasions; but if any one is desirous to obtain the Declination true to a Minute, the Correction is easily applied, as shewn above.

The other Articles of Page 7, and 8, *viz.* the Moon's right Ascension, her Semidiameter, horizontal Parallax, with its Logarithm, and the Distances contained in the Four last Pages of the Month, may be all found correctly by even Proportion, without requiring any Allowance on Account of second Differences. The proportional Part of the Moon's Longitude, &c. for any Hour, may be found very readily by the Help of the Table of proportional Logarithms at the End of the requisite Tables; for which consult the Explanation of those Tables.

The Moon's Longitude and Latitude are used in computing her Distances from the Sun and Stars contained in the Four last Pages of the Month, as well as in the Appulses to Stars pointed out in Page 1, and, jointly with her Parallax and Semidiameter, are necessary for computing the Eclipses of the Sun and Moon, and the Occultations of fixed Stars and Planets by the Moon. They also facilitate the Calculation of the Longitude of any Place from an Eclipse of the Sun; or an Occultation of a Star or Planet by the Moon observed: Or, if the Meridian be well known, the Parallax and Semidiameter serve to deduce the Moon's true Place in the Heavens from the Observation, which compared with that given by the Ephemeris shews the Error of the Tables, whatever it be at that Time. The Moon's Semidiameter and Parallax are applied in correcting almost all Observations of the Moon. The logarithmic Logarithms of the Moon's Parallax serve further to facilitate the Calculations of Parallaxes, but if the Table of proportional Logarithms at the End of the requisite Tables be made use

of, which will be most convenient, the constant Quantity 0.4771 must be added to the logistic Logarithms of the Moon's horizontal Parallax contained in the Ephemeris of 1767, to reduce them to proportional Logarithms. It will be more convenient to substitute proportional Logarithms of the Moon's Parallax instead of the logistic Logarithms in a future Ephemeris.

The Moon's right Ascension and Declination are useful to compute her Altitude at any Time, particularly at the Observation of her Distance from the Sun or a Star, supposing it was neglected to be or could not be observed properly; which latter Case may sometimes happen in the Night, though I think but rarely; the utmost Accuracy not being required for the Calculations of Refraction and Parallax. See British Mariner's Guide, Page 57. The Moon's Declination, with her Semidiameter and Parallax, serve for finding the Latitude by the Meridian Altitude of her upper or lower Limb observed at Sea. See British Mariner's Guide, Page 93. The Moon's right Ascension and Declination serve also to compute the Time from her Altitude observed at the Observation of her Distance from a Star; whence the Longitude may be inferred, though no Altitude of the Sun or a Star was taken for regulating the Time. See British Mariner's Guide, Page 61.

The Distances of the Moon from the Sun and fixed Stars, contained in the Four last Pages of the Month, are set down to every Three Hours of Apparent Time by the Meridian of Greenwich, and are designed to relieve the Mariner from the Necessity of a Calculation, which he might think prolix and troublesome, and to enable him, when compared with the same Distances observed carefully at Sea, to infer his Longitude readily and with little Danger of Mistake to a Degree of Exactness that may be thought sufficient for most nautical Purposes. But useful and valuable as the Practice of this Method may be at present, it is a Remark not unworthy our Notice, that there is Room to hope, by future Improvements of the Lunar Tables, and the Introduction of a more accurate Method of constructing Instruments, it may be carried to a much higher Degree of Perfection.

The Moon's Distances are computed both from the Sun and proper Stars, and generally from One Object on each Side of her, to afford the Mariner a greater Number of Opportunities of Observation, and a Means of attaining a greater Degree of Exactness. The Distances from the Sun  
are



are computed between  $40^{\circ}$  and  $120^{\circ}$  of Distance. While the Moon is between the Distances of  $20^{\circ}$  and  $40^{\circ}$  from the Sun, her Distance is computed only from a Star on the contrary Side that the Sun is. When she is between the Distances of  $40^{\circ}$  and  $90^{\circ}$  from the Sun, her Distance is computed both from the Sun and from a Star on the contrary Side to the Sun; when the Moon is above  $90^{\circ}$  from the Sun her Distance is computed from Two Stars, one on each Side of her; though still her Distance is computed also from the Sun from  $90^{\circ}$  to  $120^{\circ}$ . Though the Distance of the Moon from the Sun or Star, well observed with a good Instrument, is sufficient to determine the Longitude, with the Help of the Ephemeris, always within a Degree, and generally much nearer, yet it will conduce to still greater Accuracy, if the Observer takes the Distance of the Moon from Two Stars, or the Sun and a Star, or, when the Moon is between  $90^{\circ}$  and  $120^{\circ}$  Distance from the Sun, from the Sun and Two Stars, if he can be so lucky as to obtain these several Observations.

The Longitude being computed from the Observations made with each Star respectively, the Mean of the Results is to be taken as probably approaching nearest to the true Longitude. In particular the Moon's Distance should be taken from Two Stars, or the Sun and a Star on each Side of her, as often as Opportunity permits, since the Mean of the Results will probably be at least as exact again as either separately, I mean as far as depends on any Imperfection of the Instruments, and unavoidable small Errors arising in the Use of them; Errors of these Kinds having a natural Tendency to correct each other; for that small Error which arises from the Lunar Tables will affect the Result from either Star equally. But the Error of Mr. Mayer's last Lunar Tables here made use of, scarce ever exceeding  $1'$  at the most, and seldom amounting to  $20''$ , the Uncertainty hence arising in the Determination of the Longitude can scarcely exceed Half a Degree, and generally will not exceed 10 Miles.

The Distances set down in the Ephemeris, afford the Observer a ready Means of knowing the Star from which the Moon's Distance is to be observed; for he has nothing to do but to set his Quadrant to the Distance computed roughly from the Ephemeris, neglecting the Seconds, at the apparent Time estimated nearly by the Meridian of Greenwich; and direct his Sight to the East or West of the Moon, according as the Distance at Greenwich is found in Page 9 and



10, or in Two last Pages of the Month; and having found the Moon upon the little Speculum, let him give a Sweep with the Quadrant to the Right and Left, and he will find the Star he seeks for, if above the Horizon and the Air be clear, nearly in a Line perpendicular to the Line of the Moon's Horns or longer Axis, or, which is the same Thing, in the Line of the Moon's shorter Axis produced. The Star is always one of the brightest, so that there is little Danger of mistaking another for it, if the preceding Directions are carefully observed. The Time at Greenwich is estimated nearly by turning the supposed Longitude from Greenwich into Time, by Table Page 6, 7, and 8, and adding it to or subtracting it from the apparent Time at the Ship, as its Longitude is West or East of Greenwich. It will be sufficient if the Distance be computed from the Ephemeris within 10'. or 20'. for setting the Quadrant. The principal Use of the Distances of the Moon from the Sun and fixed Stars; namely, in determining the Longitude by Comparison with the corresponding Distances observed at Sea, will be shewn hereafter in its proper Order, in the Dissertation explaining the Method of computing the Longitude at Sea by the Help of the Ephemeris.

The Distances contained in the Ephemeris were computed strictly to Noon and Midnight, and thence interpolated for every Three Hours, according to the Method shewn for computing the Moon's Latitude, Page 17—19: Except that the Correction of second Differences at the Middle of the Interval to be interpolated, was taken  $\frac{1}{2}$  of the Mean of the Two second Differences, and at the First and Third Quarter of the Interval was taken  $\frac{3}{4}$  of the Correction just found at the Middle of the Interval; instead of consulting Table Page 11, which would however have given the same Result. But, at the first 12 Hours, when the Distances of the Moon from a Star begin, and the last 12 Hours, when the Distances end, there being only One second Difference instead of Two second Differences on each Side to take a Mean of, this Method fails in these Cases, and therefore the following is to be substituted in its stead, being derived from Sir Isaac Newton's Solution of the Problem of drawing a Curve through the Extremities of any Number of given Ordinates. Phil. Nat. Princ. Math. Page 486. Edit. ult.

From Four Distances at Noon and Midnight computed strictly, to interpolate Three Distances at the 3d, 6th, and 9th Hour of the first or last Interval.

Substra

Subtract each Distance from the following, for the first Differences, and prefix the Sign —, if the Distances decrease. Subtract each first Difference thus found from the following One of the same Order, for the second Differences: And in like Manner subtract the First 2d Difference from the following for the third Difference; applying the Signs as in algebraic Subtraction. Denote the first or last first Difference by  $b$ , the first or last second Difference by  $c$ ; according as the Interpolation to be made is for the first or last 12 Hours, denote also the third Difference by  $d$ ; and,  $a$  being put to signify the Distance at the Beginning of the Interval, the interpolated Distances will be as follows:

At 3d Hour of first Interval	$a + \frac{1}{4}b - \frac{3}{32}c + \frac{7}{128}d$
At 6th Hour of first Interval	$a + \frac{1}{2}b - \frac{1}{8}c + \frac{1}{16}d$
At 9th Hour of first Interval	$a + \frac{3}{4}b - \frac{3}{8}c + \frac{1}{128}d$
Or	
At 3d Hour of last Interval	$a + \frac{1}{4}b - \frac{3}{32}c - \frac{5}{128}d$
At 6th Hour of last Interval	$a + \frac{1}{2}b - \frac{1}{8}c - \frac{1}{16}d$
At 9th Hour of last Interval	$a + \frac{3}{4}b - \frac{3}{8}c - \frac{7}{128}d$

In adapting these Formulæ to Numbers, great Care must be taken about the right Application of the Signs. Thus if  $b$ ,  $c$  or  $d$  is Negative, apply the Number expressing the Value of that Term of the Formula where it is found with a contrary Sign to that of the Formula.

Let me add in this Place, that if in filling up the first and last Intervals, a new second Difference has been supposed in arithmetical Progression with the Two given ones, in order to take a Mean between it and the first or last second Difference, the Interpolation at the Middle of the Interval or 6th Hour will be had true, the same as if the above Formulæ had been used: But at the Interpolation of the first and third Quarter there will be an Error of  $\frac{1}{128}$  third Difference; which will be corrected, by applying  $+\frac{1}{128}d$  or third Difference, to Number found at the first Quarter of the Interval, and  $-\frac{1}{128}d$  to that found at the third Quarter of the Interval; equally the same whether it be the first or last Interval.





**TABULÆ NOVÆ ET CORRECTÆ**

**P R O**

**SUPPUTANDIS ECLIPSIBUS**

**SECUNDI SATELLITIS JOVIS.**

**AUCTORE DOMINO WARGENTIN.**

**A D**

**MERIDIANUM OBSERVATORII REGII**

**GRENOVICENSIS ACCOMMODATÆ.**

**L O N D I N I :**

**TYPIS GULIELMI RICHARDSON.**

**M.DCC.LXXVI.**

**[A]**

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1954

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TAB. I. Radices mediorum Motuum Secundi Satellitis.

An. Greg. incipient.	Prima Oppositio media Anni.	A.	B.	C.	D.
	D. H. M. S.				
1660	0. 4. 48. 41	3225	346	444	901
1700	2. 1. 57. 55	965	975	839	126
1720	0. 17. 53. 35	3433	285	519	738
1740	2. 23. 7. 9	2305	604	216	351
1760	1. 15. 2. 49	1173	914	905	963
1780	0. 6. 58. 29	41	224	594	575
1800	3. 12. 12. 3	2513	543	291	188

TAB. II. Motus annuus Secundi Satellitis.

Anni Jul. Compl.	D. H. M. S.	A.	B.	C.	D.
1	1. 1. 43. 16	304	918	836	81
2	2. 3. 26. 31	608	835	673	162
3	3. 5. 9. 47	912	753	509	243
4	3. 6. 53. 2	1217	671	346	324
5	0. 19. 18. 24	1518	580	174	404
6	1. 21. 1. 39	1822	498	11	484
7	2. 22. 44. 55	2126	415	847	565
8	3. 0. 28. 10	2430	333	684	646
9	0. 12. 53. 32	2731	242	512	726
10	1. 14. 36. 47	3035	160	349	807
11	2. 16. 20. 3	3340	77	185	887
12	2. 18. 3. 18	44	995	21	968
13	0. 6. 28. 40	345	904	850	48
14	1. 8. 11. 55	649	822	687	129
15	2. 9. 55. 11	954	740	523	210
16	2. 11. 38. 26	1258	657	359	290
17	0. 0. 3. 48	1559	566	187	370
18	1. 1. 47. 4	1863	484	24	451
19	2. 3. 30. 19	2167	402	860	532
20	2. 5. 13. 34	2471	319	597	613
40	0. 21. 9. 14	1340	629	386	225
60	3. 2. 22. 48	211	948	83	838
100	0. 10. 14. 8	1548	568	461	62
100 Gr.	-1. 10. 14. 8	1548	568	461	62



TAB. III. Revolutiones Secundi in Mensibus Anni.

Mens.	D. H. M. S.	A.	B.	C.	D.
Januar.	3. 13. 17. 54	3	9	8	1
	7. 2. 35. 48	6	18	16	2
	10. 15. 53. 41	9	27	24	3
	14. 5. 11. 35	12	36	32	4
	17. 18. 29. 29	15	46	40	4
	21. 7. 47. 23	18	55	48	5
	24. 21. 5. 17	21	64	56	6
	28. 10. 23. 10	24	73	64	7
	31. 23. 41. 4	27	82	73	8
Februar.	0. 23. 41. 4	27	82	73	8
	4. 12. 58. 58	30	92	81	9
	8. 2. 16. 52	33	101	89	9
	11. 15. 34. 46	36	110	97	10
	15. 4. 52. 39	39	119	105	11
	18. 18. 10. 33	42	128	113	12
	22. 7. 28. 27	45	137	121	12
	25. 20. 46. 21	47	146	130	13
	29. 10. 4. 15	50	156	138	14
Mart.	1. 10. 4. 15	50	156	138	14
	4. 23. 22. 8	53	165	146	15
	8. 12. 40. 2	56	174	154	15
	12. 1. 57. 56	59	183	162	16
	15. 15. 15. 50	62	192	170	17
	19. 4. 33. 44	65	201	178	18
	22. 17. 51. 37	68	210	186	18
	26. 7. 9. 31	71	219	194	19
	29. 20. 27. 24	74	228	202	20
Apr.	2. 9. 45. 18	77	237	211	21
	5. 23. 3. 12	80	246	219	21
	9. 12. 21. 6	83	255	227	22
	13. 1. 39. 0	86	264	235	23
	16. 14. 56. 53	89	272	243	24
	20. 4. 14. 47	92	281	251	24
	23. 17. 32. 40	94	290	259	25
	27. 6. 50. 34	97	298	267	26
	30. 20. 8. 28	100	307	276	27
Annis Biffextilibus, in Jan. & Feb. addatur Dies unus.					

Contin. TAB. III. seu Revolutionum Menfr. Secundi Satellitis.

Menfr.	D. H. M. S.	A.	B.	C.	D.
Maj.	0. 20. 8. 28	100	307	276	27
	4. 9. 26. 22	103	316	284	28
	7. 22. 44. 16	106	324	292	29
	11. 12. 2. 9	109	333	300	30
	15. 1. 20. 3	112	342	308	30
	18. 14. 37. 57	115	351	316	31
	22. 3. 55. 51	118	360	324	32
	25. 17. 13. 45	121	368	332	33
	29. 6. 31. 38	124	377	340	34
Jun.	1. 19. 49. 32	127	386	348	34
	5. 9. 7. 26	130	395	357	35
	8. 22. 25. 20	133	403	365	36
	12. 11. 43. 14	136	411	373	37
	16. 1. 1. 7	139	420	381	37
	19. 14. 19. 1	142	428	389	38
	23. 3. 36. 55	144	437	397	39
	26. 16. 54. 48	147	446	406	40
	30. 6. 12. 42	150	454	414	40
Jul.	0. 6. 12. 42	150	454	414	40
	3. 19. 30. 35	153	463	422	41
	7. 8. 48. 29	156	471	430	42
	10. 22. 6. 23	159	480	438	43
	14. 11. 24. 17	162	489	446	43
	18. 0. 42. 11	165	497	454	44
	21. 14. 0. 4	168	506	462	45
	25. 3. 17. 58	171	515	470	46
	28. 16. 35. 52	174	523	478	47
Aug.	1. 5. 53. 46	177	532	487	47
	4. 19. 11. 40	180	540	495	48
	8. 8. 29. 33	183	549	503	49
	11. 21. 47. 27	186	558	511	50
	15. 11. 5. 21	189	567	519	51
	19. 0. 23. 15	192	575	527	51
	22. 13. 41. 8	194	584	535	52
	26. 2. 59. 2	197	593	543	53
	29. 16. 16. 56	200	602	551	54

Maxima quantitas hujus æquationis apud annum 1770 fuit 1660<sup>h</sup> 1. 18. 37  
 2<sup>d</sup>. 19. 13<sup>h</sup>, decursu autem temporis variatur pro ratione va- 1700 1. 18. 50  
 riationis æquationis centralis orbitæ Jovialis, sicut in adjecta 1740 1. 19. 3  
 tabula signatur, 1770 1. 19. 13  
 1800 1. 19. 22

Contin. TAB. III. seu Revolutionum Menstr. Secundi Satellitis.

Menf.	D. H. M. S.	A.	B.	C.	D.
Sept.	2. 5. 34. 50	203	610	560	55
	5. 18. 52. 43	206	619	568	55
	9. 8. 10. 36	209	628	576	56
	12. 21. 28. 30	212	637	584	57
	16. 10. 46. 24	215	646	592	58
	20. 0. 4. 18	218	654	600	59
	23. 13. 22. 12	221	663	608	59
	27. 2. 40. 5	224	672	616	60
Oct.	0. 15. 57. 59	227	681	624	61
	4. 5. 15. 53	230	690	633	62
	7. 18. 33. 47	233	699	641	63
	11. 7. 51. 41	236	708	649	64
	14. 21. 9. 34	239	717	657	64
	18. 10. 27. 28	242	726	665	65
	21. 23. 45. 22	245	735	673	66
	25. 13. 3. 16	248	744	681	67
	29. 2. 21. 10	251	753	689	67
Novem.	1. 15. 39. 3	253	762	698	68
	5. 4. 56. 57	256	771	706	69
	8. 18. 14. 51	259	780	714	70
	12. 7. 32. 44	262	789	722	71
	15. 20. 50. 38	265	798	730	71
	19. 10. 8. 31	268	808	738	72
	22. 23. 26. 25	271	817	746	73
	26. 12. 44. 19	274	826	754	74
	30. 2. 2. 13	277	835	762	75
Decem.	3. 15. 20. 7	280	844	770	75
	7. 4. 38. 0	283	854	778	76
	10. 17. 55. 54	286	863	787	77
	14. 7. 13. 48	289	872	795	78
	17. 20. 31. 42	292	881	803	78
	21. 9. 49. 35	295	890	811	79
	24. 23. 7. 29	298	900	820	80
	28. 12. 25. 22	301	909	828	81



TAB. IV. *Æquatio Secundi Satellitis, ab Excentricitate Jovis pendens, cujus Argumentum est Num. A.*

Subtrahatur descendendo : addatur ascendendo.

A.	Æqu. sub.	Diff.	A.	Æqu. sub.	Diff.
	M. S.	M.S.		H. M. S.	M.S.
0	3600	0. 0	300	3300	0. 37. 38
10	3590	1. 19	310	3290	0. 38. 47
20	3580	2. 37	320	3280	0. 39. 55
30	3570	3. 55	330	3270	0. 41. 3
40	3560	5. 13	340	3260	0. 42. 10
50	3550	6. 31	350	3250	0. 43. 16
60	3540	7. 49	360	3240	0. 44. 21
70	3530	9. 7	370	3230	0. 45. 26
80	3520	10. 25	380	3220	0. 46. 31
90	3510	11. 42	390	3210	0. 47. 35
100	3500	12. 59	400	3200	0. 48. 38
110	3490	14. 16	410	3190	0. 49. 40
120	3480	15. 33	420	3180	0. 50. 42
130	3470	16. 50	430	3170	0. 51. 43
140	3460	18. 6	440	3160	0. 52. 43
150	3450	19. 22	450	3150	0. 53. 42
160	3440	20. 38	460	3140	0. 54. 40
170	3430	21. 54	470	3130	0. 55. 37
180	3420	23. 9	480	3120	0. 56. 33
190	3410	24. 24	490	3110	0. 57. 28
200	3400	25. 39	500	3100	0. 58. 22
210	3390	26. 53	510	3090	0. 59. 15
220	3380	28. 6	520	3080	1. 0. 8
230	3370	29. 19	530	3070	1. 0. 59
240	3360	30. 31	540	3060	1. 1. 49
250	3350	31. 43	550	3050	1. 2. 39
260	3340	32. 55	560	3040	1. 3. 28
270	3330	34. 7	570	3030	1. 4. 15
280	3320	35. 19	580	3020	1. 5. 1
290	3310	36. 29	590	3010	1. 5. 46
300	3300	37. 38	600	3000	1. 6. 30
A.	Æqu. add.	Diff.	A.	Æqu. add.	Diff.

Contin. TAB. IV. *Æquatio Secundi Satellitis, ab Excentricitate Jovis pendens, cujus Argumentum est Num. A.*

Subtrahatur descendendo : addatur ascendendo.

A.		Æqu. sub.	Diff.	A.		Æqu. sub.	Diff.
		H. M. S.	S.			H. M. S.	S.
600	3000	1. 6. 30	43	900	2700	1. 19. 5	4
610	2990	1. 7. 13	42	910	2690	1. 19. 9	3
620	2980	1. 7. 55	41	920	2680	1. 19. 12	1
630	2970	1. 8. 36	40	930	2670	1. 19. 13	0
640	2960	1. 9. 16	39	940	2660	1. 19. 13	1
650	2950	1. 9. 55	38	950	2650	1. 19. 12	3
660	2940	1. 10. 33	36	960	2640	1. 19. 9	4
670	2930	1. 11. 9	35	970	2630	1. 19. 5	6
680	2920	1. 11. 44	33	980	2620	1. 18. 59	8
690	2910	1. 12. 17	33	990	2610	1. 18. 51	9
700	2900	1. 12. 50	31	1000	2600	1. 18. 42	10
710	2890	1. 13. 21	30	1010	2590	1. 18. 32	11
720	2880	1. 13. 51	29	1020	2580	1. 18. 21	13
730	2870	1. 14. 20	28	1030	2570	1. 18. 8	15
740	2860	1. 14. 48	26	1040	2560	1. 17. 53	16
750	2850	1. 15. 14	25	1050	2550	1. 17. 37	18
760	2840	1. 15. 39	23	1060	2540	1. 17. 19	19
770	2830	1. 16. 2	22	1070	2530	1. 17. 0	21
780	2820	1. 16. 24	21	1080	2520	1. 16. 39	22
790	2810	1. 16. 45	20	1090	2510	1. 16. 17	23
800	2800	1. 17. 5	18	1100	2500	1. 15. 54	25
810	2790	1. 17. 23	17	1110	2490	1. 15. 29	27
820	2780	1. 17. 40	16	1120	2480	1. 15. 2	28
830	2770	1. 17. 56	14	1130	2470	1. 14. 34	29
840	2760	1. 18. 10	13	1140	2460	1. 14. 5	31
850	2750	1. 18. 23	11	1150	2450	1. 13. 34	33
860	2740	1. 18. 34	10	1160	2440	1. 13. 1	34
870	2730	1. 18. 44	8	1170	2430	1. 12. 27	36
880	2720	1. 18. 52	7	1180	2420	1. 11. 51	36
890	2710	1. 18. 59	6	1190	2410	1. 11. 15	37
900	2700	1. 19. 5		1200	2400	1. 10. 38	
A.		Æqu. add.	Diff.	A.		Æqu. add.	Diff.

Contin. TAB.IV. Aequatio Secundi Satellitis, ab Excentricitate Jovis pendens, cujus Argumentum est Num. A.  
Subtrahatur descendendo : addatur ascendendo.

A.		Equ. sub.	Diff.	A.		Equ. sub.	Diff.
		H. M. S.	M. S.			M. S.	M. S.
1200	2400	1. 10. 38		1500	2100	41. 46	
1210	2390	1. 9. 59	0. 39	1510	2090	40. 32	1. 14
1220	2380	1. 9. 18	0. 41	1520	2080	39. 17	1. 15
1230	2370	1. 8. 36	0. 42	1530	2070	38. 1	1. 16
1240	2360	1. 7. 52	0. 44	1540	2060	36. 44	1. 17
1250	2350	1. 7. 7	0. 45	1550	2050	35. 26	1. 18
1260	2340	1. 6. 21	0. 46	1560	2040	34. 7	1. 19
1270	2330	1. 5. 34	0. 47	1570	2030	32. 47	1. 20
1280	2320	1. 4. 45	0. 49	1580	2020	31. 26	1. 21
1290	2310	1. 3. 55	0. 50	1590	2010	30. 5	1. 21
1300	2300	1. 3. 3	0. 52	1600	2000	28. 43	1. 22
1310	2290	1. 2. 10	0. 53	1610	1990	27. 21	1. 22
1320	2280	1. 1. 16	0. 54	1620	1980	25. 58	1. 23
1330	2270	1. 0. 21	0. 55	1630	1970	24. 35	1. 23
1340	2260	0. 59. 24	0. 57	1640	1960	23. 11	1. 24
1350	2250	0. 58. 26	0. 58	1650	1950	21. 46	1. 25
1360	2240	0. 57. 27	0. 59	1660	1940	20. 21	1. 25
1370	2230	0. 56. 27	1. 0	1670	1930	18. 56	1. 25
1380	2220	0. 55. 26	1. 1	1680	1920	17. 30	1. 26
1390	2210	0. 54. 24	1. 2	1690	1910	16. 3	1. 27
1400	2200	0. 53. 21	1. 3	1700	1900	14. 36	1. 27
1410	2190	0. 52. 16	1. 5	1710	1890	13. 9	1. 27
1420	2180	0. 51. 10	1. 6	1720	1880	11. 42	1. 27
1430	2170	0. 50. 3	1. 7	1730	1870	10. 15	1. 27
1440	2160	0. 48. 55	1. 8	1740	1860	8. 48	1. 27
1450	2150	0. 47. 46	1. 9	1750	1850	7. 20	1. 28
1460	2140	0. 46. 36	1. 10	1760	1840	5. 52	1. 28
1470	2130	0. 45. 25	1. 11	1770	1830	4. 24	1. 28
1480	2120	0. 44. 12	1. 13	1780	1820	2. 56	1. 28
1490	2110	0. 42. 59	1. 13	1790	1810	1. 28	1. 28
1500	2100	0. 41. 46	1. 13	1800	1800	0. 0	1. 28
A.		Equ. add.	Diff.	A.		Equ. add.	Diff.
<p>Maxima quantitas hujus aequationis apud annum 1770 fuit 1660 1. 18. 37  1b. 19. 13, decursu autem temporis variatur pro ratione va- 1700 1. 18. 50  riationis aequationis centralis orbitae Jovialis, sicut in adjecta 1740 1. 19. 3  tabula signatur. 1770 1. 19. 13  1800 1. 19. 22</p>							



TAB. V. *Æquat. quæ periodo*  
437 Dierum recurrit, cujus  
Argumentum est Num. C.

C.	<i>Æqu. add.</i>	
	M. S.	
0	0. 0	1000
10	0. 4	990
20	0. 11	980
30	0. 22	970
40	0. 37	960
50	0. 55	950
60	1. 16	940
80	2. 9	920
100	3. 18	900
120	4. 36	880
140	6. 3	860
160	7. 38	840
180	9. 22	820
200	11. 12	800
220	13. 6	780
240	15. 2	760
250	16. 0	750
260	16. 58	740
280	18. 54	720
300	20. 48	700
320	22. 38	680
340	24. 22	660
360	25. 57	640
380	27. 24	620
400	28. 42	600
410	29. 18	590
420	29. 51	580
430	30. 19	570
440	30. 44	560
450	31. 5	550
460	31. 23	540
470	31. 38	530
480	31. 49	520
490	31. 56	510
500	32. 0	500

*Æqu. add.* C.

TAB. VI. *Æquat. quæ*  
periodo 12 circiter Anno-  
rum absolvitur, ab Excen-  
tricitate Orbitæ Satellitis  
pendens, cujus Argumentum  
est Numerus D.

Semper addenda.

D.		<i>Æquatio.</i>
		M. S.
0	1000	0. 0
20	980	0. 0
40	960	0. 2
60	940	0. 5
80	920	0. 9
100	900	0. 14
120	880	0. 20
140	860	0. 27
160	840	0. 35
180	820	0. 43
200	800	0. 52
220	780	1. 1
240	760	1. 10
260	740	1. 20
280	720	1. 29
300	700	1. 38
320	680	1. 47
340	660	1. 55
360	640	2. 3
380	620	2. 10
400	600	2. 16
420	580	2. 21
440	560	2. 25
460	540	2. 28
480	520	2. 29
500	500	2. 30

D. *Æquatio.*

TAB. VII. Summa Equationum, ab Actione Saturni in Jovem  
pendentium, ad datos Annos & Menfes calculata, quæ  
semper addenda.

						Equatio.	
Anni.	Equa.	Anni.	Equa.	Anni.	Equa.	1 Jan.	1 Jul.
	M. S.		M. S.		M. S.	M. S.	M. S.
1668	2. 39	1702	1. 17	1736	3. 33	1770	1. 48
1669	1. 58	1703	1. 50	1737	3. 21	1771	2. 5
1670	1. 32	1704	2. 25	1738	2. 52	1772	2. 32
1671	1. 23	1705	2. 48	1739	2. 20	1773	3. 2
1672	1. 38	1706	2. 50	1740	1. 59	1774	3. 30
1673	2. 12	1707	2. 37	1741	1. 54	1775	3. 37
1674	2. 49	1708	2. 15	1742	2. 6	1776	3. 26
1675	3. 19	1709	1. 55	1743	2. 22	1777	3. 3
1676	3. 32	1710	1. 51	1744	2. 36	1778	2. 35
1677	3. 28	1711	1. 59	1745	2. 34	1779	2. 13
1678	3. 6	1712	2. 20	1746	2. 8	1780	2. 3
1679	2. 30	1713	2. 51	1747	1. 32	1781	2. 22
1680	2. 2	1714	3. 21	1748	0. 58	1782	2. 58
1681	1. 49	1715	3. 37	1749	0. 41	1783	3. 34
1682	1. 54	1716	3. 36	1750	0. 38	1784	3. 59
1683	2. 9	1717	3. 19	1751	0. 58	1785	4. 3
1684	2. 25	1718	2. 51	1752	1. 39	1786	3. 37
1685	2. 33	1719	2. 25	1753	2. 22	1787	2. 56
1686	2. 16	1720	2. 7	1754	2. 58	1788	2. 14
1687	1. 45	1721	2. 15	1755	3. 17	1789	1. 48
1688	1. 11	1722	2. 46	1756	3. 13	1790	1. 36
1689	0. 46	1723	3. 21	1757	2. 46	1791	1. 45
1690	0. 34	1724	3. 50	1758	2. 5	1792	2. 13
1691	0. 48	1725	4. 5	1759	1. 27	1793	2. 49
1692	1. 23	1726	3. 47	1760	1. 2	1794	3. 23
1693	2. 5	1727	3. 11	1761	1. 4	1795	3. 35
1694	2. 45	1728	2. 26	1762	1. 26	1796	3. 30
1695	3. 15	1729	1. 52	1763	2. 0	1797	3. 15
1696	3. 18	1730	1. 32	1764	2. 32	1798	2. 41
1697	3. 0	1731	1. 32	1765	2. 45	1799	2. 13
1698	2. 26	1732	1. 56	1766	2. 38	1800	2. 1
1699	1. 41	1733	2. 32	1767	2. 20	1801	2. 4
1700	1. 12	1734	3. 8	1768	1. 58	1802	2. 20
1701	1. 2	1735	3. 28	1769	1. 46	1803	2. 34
						1804	2. 45
						1805	2. 32
						1806	1. 57

TAB. VIII. Reductio ad Medium Eclipses.

Subtrahatur descendendo : addatur ascendendo.

Ditt. a N <sup>do</sup>	Num. A. cor.		Incli.	Incli.	Incli.	Incli.	Num. A. cor.	
			2°.46'	3°.6'	3°.26'	3°.46'		
D.			S.	S.	S.	S.		
0	1279	2985	0	0	0	0	2985	1279
3	1308	2954	3	4	5	6	3017	1250
6	1337	2923	6	8	10	12	3049	1221
9	1366	2892	9	12	14	17	3081	1192
12	1394	2861	12	15	18	22	3113	1163
15	1422	2830	14	18	22	27	3145	1134
18	1450	2799	16	21	26	32	3177	1105
21	1478	2769	18	24	30	36	3209	1075
24	1506	2739	20	27	33	40	3241	1045
27	1534	2709	22	29	36	43	3274	1015
30	1562	2679	24	31	38	46	3307	985
33	1590	2649	25	33	40	48	3340	955
36	1618	2619	26	34	42	50	3373	925
39	1645	2589	27	35	43	51	3406	895
42	1672	2559	28	36	44	52	3439	865
45	1699	2530	28	36	45	53	3472	835
48	1726	2501	28	36	44	52	3505	805
51	1753	2472	27	35	43	51	3538	774
54	1780	2443	26	34	42	50	3571	743
57	1807	2414	25	32	40	48	4	712
60	1834	2385	24	31	38	46	37	681
63	1861	2356	22	29	36	43	70	650
66	1888	2328	20	27	33	40	103	619
69	1915	2300	18	24	30	36	136	587
72	1942	2272	16	21	26	32	169	555
75	1969	2244	14	18	22	27	202	523
78	1996	2216	12	15	18	22	235	491
81	2023	2188	9	12	14	17	267	459
84	2050	2160	6	8	10	12	299	427
87	2077	2132	3	4	5	6	331	395
90	2104	2104	0	0	0	0	363	363



TAB. IX. *Æquatio Luminis minor, ab Excentricitate Jovis pendens, cum Correctionibus Argumentorum B & C.*

A.	<i>Æquat.</i> add.	Cor. B & C. add.		A.	<i>Æquat.</i> add.	Cor. B & C. add.	
	M.S	B.	C.		M. S	B.	C.
0	4. 5	15	15	1800	0. 0	15	15
100	4. 3	17	13	1900	0. 2	12	18
200	3. 58	19	11	2000	0. 9	9	20
300	3. 50	21	9	2050	0. 13	8	21
400	3. 40	23	7	2100	0. 18	7	22
500	3. 26	24	5	2150	0. 24	5	23
550	3. 18	25	4	2200	0. 31	4	24
600	3. 9	26	3	2250	0. 39	3	25
650	2. 59	26	2	2300	0. 48	2	26
700	2. 50	27	2	2350	0. 57	2	27
750	2. 40	28	1	2400	1. 6	1	28
800	2. 30	28	1	2450	1. 16	1	28
850	2. 20	29	1	2500	1. 26	0	28
900	2. 10	29	0	2550	1. 37	0	29
950	1. 59	29	0	2600	1. 48	0	29
1000	1. 48	29	0	2650	1. 59	0	29
1050	1. 37	29	0	2700	2. 10	0	29
1100	1. 26	28	0	2750	2. 20	1	29
1150	1. 16	28	1	2800	2. 30	1	28
1200	1. 6	27	1	2850	2. 40	1	28
1250	0. 57	26	2	2900	2. 50	2	28
1300	0. 48	26	2	2950	2. 59	2	27
1350	0. 39	25	3	3000	3. 9	3	27
1400	0. 31	24	4	3050	3. 18	3	26
1450	0. 24	23	5	3100	3. 26	4	25
1500	0. 18	22	6	3200	3. 40	6	23
1550	0. 13	21	8	3300	3. 50	8	21
1600	0. 9	20	9	3400	3. 58	10	19
1700	0. 2	18	12	3500	4. 3	12	17
1800	0. 0	15	15	3600	4. 5	15	15

TAB. X. *Æquatio Luminis major, ex Angulo Commutationis pendens.*

B. cor.	0	100	200	300	400	B. cor.
	M. S.	M. S.	M. S.	M. S.	M. S.	
0	16. 15	14. 56	11. 18	6. 21	1. 52	100
4	16. 15	14. 49	11. 7	6. 9	1. 44	96
8	16. 14	14. 43	10. 56	5. 58	1. 36	92
12	16. 14	14. 36	10. 46	5. 46	1. 28	88
16	16. 13	14. 29	10. 34	5. 34	1. 20	84
20	16. 12	14. 22	10. 22	5. 22	1. 13	80
24	16. 10	14. 15	10. 10	5. 11	1. 6	76
28	16. 8	14. 7	9. 59	4. 59	1. 0	72
32	16. 6	13. 59	9. 47	4. 48	0. 54	68
36	16. 4	13. 51	9. 36	4. 37	0. 48	64
40	16. 2	13. 43	9. 24	4. 26	0. 42	60
44	15. 59	13. 35	9. 12	4. 15	0. 37	56
48	15. 56	13. 26	9. 0	4. 4	0. 32	52
52	15. 53	13. 17	8. 48	3. 53	0. 27	48
56	15. 50	13. 8	8. 36	3. 42	0. 23	44
60	15. 47	12. 59	8. 23	3. 32	0. 19	40
64	15. 43	12. 49	8. 11	3. 21	0. 15	36
68	15. 38	12. 40	7. 59	3. 11	0. 12	32
72	15. 34	12. 30	7. 47	3. 1	0. 9	28
76	15. 29	12. 20	7. 34	2. 51	0. 7	24
80	15. 24	12. 10	7. 22	2. 41	0. 5	20
84	15. 19	12. 0	7. 10	2. 31	0. 3	16
88	15. 13	11. 49	6. 58	2. 21	0. 2	12
92	15. 8	11. 39	6. 46	2. 11	0. 1	8
96	15. 2	11. 28	6. 34	2. 1	0. 0	4
100	14. 56	11. 18	6. 21	1. 52	0. 0	0
B. cor.	900	800	700	600	500	B. cor.

Num. B. cor. five Elongatio.

TAB. XI. *Æquatio Temporis, quam ad quamvis Anni Diem exhibent hæ Ephemerides, vel addendam vel subtrahendam.*

TAB. XII. Tabula indicans Inclinationem Orbitæ Secundi Satellitis, & Correctionem Numeri A, quando per eum Numerum quæritur Mora Eclipsos in Tab. sequent.

Anni Incipientes.		Inclinatio.	Correctio Num. A.	Anni Incipientes.		Anni Period. Compl.
		D. M. S.				
1688	1717	3. 48. 0	0	1747	1777	0
1689	1718	3. 47. 26	+ 16	1748	1778	1
1690	1719	3. 45. 43	+ 31	1749	1779	2
1691	1720	3. 42. 58	+ 45	1750	1780	3
1692	1721	3. 39. 12	+ 58	1751	1781	4
1693	1722	3. 34. 33	+ 70	1752	1782	5
1694	1723	3. 29. 13	+ 78	1753	1783	6
1695	1724	3. 23. 20	+ 84	1754	1784	7
1696	1725	3. 17. 8	+ 87	1755	1785	8
1697	1726	3. 10. 52	+ 86	1756	1786	9
1698	1727	3. 4. 50	+ 81	1757	1787	10
1699	1728	2. 59. 19	+ 72	1758	1788	11
1700	1729	2. 54. 37	+ 58	1759	1789	12
1701	1730	2. 51. 1	+ 41	1760	1790	13
1702	1731	2. 48. 46	+ 21	1761	1791	14
1703	1732	2. 48. 0	— 0	1762	1792	15
1704	1733	2. 48. 46	— 21	1763	1793	16
1705	1734	2. 51. 1	— 41	1764	1794	17
1706	1735	2. 54. 37	— 58	1765	1795	18
1707	1736	2. 59. 19	— 72	1766	1796	19
1708	1737	3. 4. 50	— 81	1767	1797	20
1709	1738	3. 10. 52	— 86	1768	1798	21
1710	1739	3. 17. 8	— 87	1769	1799	22
1711	1740	3. 23. 20	— 84	1770	1800	23
1712	1741	3. 29. 23	— 78	1771		24
1713	1742	3. 34. 33	— 70	1772		25
1714	1743	3. 39. 12	— 58	1773		26
1715	1744	3. 42. 58	— 45	1774		27
1716	1745	3. 45. 43	— 31	1775		28
1717	1746	3. 47. 26	— 16	1776		29
1717	1747	3. 48. 0	0	1777		30



TAB. XIII. Semi-morarum Eclipsium Secundi Satellitis, cujus Argumentum duplex est. I. Numerus A. per Tabulam XII. correctus est, & II. Inclination Orbitæ, quam eadem Tabula indicat ad datum Annum hujus Seculi.

A.		Inclin.		Inclin.		Inclin.		A.	
		2°. 48'		2°. 53'		2°. 58'			
		H. M. S.	H. M. S.	H. M. S.	H. M. S.	H. M. S.	H. M. S.		
1279	2985	1. 25. 40	1. 25. 40	1. 25. 40	1. 25. 40	2985	1279		
1308	2954	1. 25. 39	1. 25. 39	1. 25. 39	1. 25. 39	3017	1250		
1337	2923	1. 25. 34	1. 25. 34	1. 25. 34	1. 25. 34	3049	1221		
1366	2892	1. 25. 26	1. 25. 26	1. 25. 25	1. 25. 24	3081	1194		
1394	2861	1. 25. 16	1. 25. 14	1. 25. 13	1. 25. 11	3113	1163		
1422	2830	1. 25. 3	1. 25. 1	1. 24. 59	1. 24. 57	3145	1134		
1450	2799	1. 24. 47	1. 24. 44	1. 24. 41	1. 24. 38	3177	1105		
1478	2769	1. 24. 28	1. 24. 24	1. 24. 20	1. 24. 16	3209	1075		
1506	2739	1. 24. 8	1. 24. 2	1. 23. 56	1. 23. 50	3241	1045		
1534	2709	1. 23. 44	1. 23. 36	1. 23. 29	1. 23. 22	3274	1015		
1562	2679	1. 23. 19	1. 23. 10	1. 23. 1	1. 22. 52	3307	985		
1590	2649	1. 22. 53	1. 22. 43	1. 22. 32	1. 22. 21	3340	955		
1618	2619	1. 22. 25	1. 22. 14	1. 22. 2	1. 21. 49	3373	925		
1645	2589	1. 21. 55	1. 21. 43	1. 21. 30	1. 21. 15	3406	895		
1672	2559	1. 21. 25	1. 21. 10	1. 20. 56	1. 20. 39	3439	865		
1699	2530	1. 20. 55	1. 20. 37	1. 20. 20	1. 20. 1	3472	835		
1726	2501	1. 20. 25	1. 20. 5	1. 19. 44	1. 19. 23	3505	805		
1753	2472	1. 19. 55	1. 19. 33	1. 19. 9	1. 18. 45	3538	774		
1780	2443	1. 19. 25	1. 19. 1	1. 18. 35	1. 18. 9	3571	743		
1807	2414	1. 18. 56	1. 18. 30	1. 18. 3	1. 17. 35	4	712		
1834	2385	1. 18. 27	1. 18. 0	1. 17. 31	1. 17. 1	37	681		
1861	2356	1. 17. 59	1. 17. 31	1. 16. 59	1. 16. 28	70	650		
1888	2328	1. 17. 35	1. 17. 4	1. 16. 32	1. 15. 59	103	619		
1915	2300	1. 17. 13	1. 16. 41	1. 16. 6	1. 15. 31	136	587		
1942	2272	1. 16. 52	1. 16. 18	1. 15. 42	1. 15. 5	169	555		
1969	2244	1. 16. 34	1. 15. 59	1. 15. 22	1. 14. 44	202	523		
1996	2216	1. 16. 18	1. 15. 42	1. 15. 4	1. 14. 25	235	491		
2023	2188	1. 16. 6	1. 15. 29	1. 14. 50	1. 14. 10	267	459		
2050	2160	1. 15. 58	1. 15. 20	1. 14. 41	1. 14. 0	299	427		
2077	2132	1. 15. 53	1. 15. 15	1. 14. 35	1. 13. 54	331	395		
2104	2104	1. 15. 51	1. 15. 13	1. 14. 33	1. 13. 52	363	363		
A.	A.	Inclin.	Inclin.	Inclin.	Inclin.	A.	A.		
		2°. 48'	2°. 53'	2°. 58'	3°. 3'				

Continuatio Tabulæ præcedentis Semi-morarum.

A.		Inclin.	Inclin.	Inclin.	Inclin.	A.	
		3°. 8'	3°. 13'	3°. 18'	3°. 23'		
		H. M. S.	H. M. S.	H. M. S.	H. M. S.		
1279	2985	1. 25. 40	1. 25. 40	1. 25. 40	1. 25. 40	2985	1279
1308	2954	1. 25. 39	1. 25. 38	1. 25. 38	1. 25. 38	3017	1250
1337	2923	1. 25. 33	1. 25. 32	1. 25. 32	1. 25. 32	3049	1221
1366	2892	1. 25. 23	1. 25. 22	1. 25. 21	1. 25. 20	3081	1194
1394	2861	1. 25. 10	1. 25. 9	1. 25. 7	1. 25. 5	3113	1163
1422	2830	1. 24. 54	1. 24. 51	1. 24. 48	1. 24. 46	3145	1134
1450	2799	1. 24. 34	1. 24. 30	1. 24. 26	1. 24. 22	3177	1105
1478	2769	1. 24. 12	1. 24. 7	1. 24. 2	1. 23. 57	3209	1075
1506	2739	1. 23. 44	1. 23. 38	1. 23. 32	1. 23. 25	3241	1045
1534	2709	1. 23. 14	1. 23. 7	1. 22. 59	1. 22. 51	3274	1015
1562	2679	1. 22. 43	1. 22. 33	1. 22. 23	1. 22. 13	3307	985
1590	2649	1. 22. 10	1. 21. 58	1. 21. 46	1. 21. 33	3340	955
1618	2619	1. 21. 35	1. 21. 21	1. 21. 7	1. 20. 52	3373	925
1645	2589	1. 21. 0	1. 20. 41	1. 20. 25	1. 20. 9	3406	895
1672	2559	1. 20. 21	1. 20. 0	1. 19. 43	1. 19. 24	3439	865
1699	2530	1. 19. 41	1. 19. 18	1. 18. 59	1. 18. 38	3472	835
1726	2501	1. 19. 1	1. 18. 37	1. 18. 15	1. 17. 51	3505	805
1753	2472	1. 18. 21	1. 17. 56	1. 17. 31	1. 17. 4	3538	774
1780	2443	1. 17. 42	1. 17. 16	1. 16. 48	1. 16. 19	3571	743
1807	2414	1. 17. 6	1. 16. 36	1. 16. 5	1. 15. 33	4	712
1834	2385	1. 16. 29	1. 15. 57	1. 15. 24	1. 14. 49	37	681
1861	2356	1. 15. 55	1. 15. 21	1. 14. 46	1. 14. 9	70	650
1888	2328	1. 15. 24	1. 14. 48	1. 14. 11	1. 13. 32	103	619
1915	2300	1. 14. 54	1. 14. 16	1. 13. 37	1. 12. 56	136	587
1942	2272	1. 14. 26	1. 13. 47	1. 13. 7	1. 12. 24	169	555
1969	2244	1. 14. 4	1. 13. 23	1. 12. 41	1. 11. 57	202	523
1995	2216	1. 13. 44	1. 13. 2	1. 12. 20	1. 11. 35	235	491
2023	2188	1. 13. 28	1. 12. 46	1. 12. 3	1. 11. 16	267	459
2050	2160	1. 13. 18	1. 12. 35	1. 11. 50	1. 11. 3	299	427
2077	2132	1. 13. 12	1. 12. 28	1. 11. 43	1. 10. 56	331	395
2104	2104	1. 13. 9	1. 12. 25	1. 11. 40	1. 10. 52	363	363
A.	A.	Inclin.	Inclin.	Inclin.	Inclin.	A.	A.
		3°. 8'	3°. 13'	3°. 18'	3°. 23'		

## Continuatio Tabulæ præcedentis Semi-morarum.

A.	Inclin.					A.	
	3°. 28'	3°. 33'	3°. 38'	3°. 43'	3°. 48'		
	H.M.S.	H.M.S.	H.M.S.	H.M.S.	H.M.S.		
1279	2985	1.25.40	1.25.40	1.25.40	1.25.40	2985	1279
1308	2954	1.25.38	1.25.38	1.25.38	1.25.37	3017	1250
1337	2923	1.25.31	1.25.31	1.25.30	1.25.30	3049	1221
1366	2892	1.25.19	1.25.18	1.25.17	1.25.16	3081	1192
1394	2861	1.25. 4	1.25. 2	1.25. 1	1.24.59	3113	1163
1422	2830	1.24.43	1.24.40	1.24.37	1.24.34	3145	1134
1450	2799	1.24.18	1.24.14	1.24.10	1.24. 6	3177	1105
1478	2769	1.23.51	1.23.45	1.23.39	1.23.33	3209	1075
1506	2739	1.23.18	1.23.11	1.23. 4	1.22.56	3241	1045
1534	2709	1.22.42	1.22.33	1.22.24	1.22.15	3274	1015
1562	2679	1.22. 3	1.21.52	1.21.41	1.21.30	3307	985
1590	2649	1.21.20	1.21. 8	1.20.54	1.20.41	3340	955
1618	2619	1.20.37	1.20.22	1.20. 6	1.19.50	3373	925
1645	2589	1.19.52	1.19.34	1.19.16	1.18.56	3406	895
1672	2559	1.19. 5	1.18.44	1.18.23	1.18. 0	3439	865
1699	2530	1.18.15	1.17.52	1.17.28	1.17. 3	3472	835
1726	2501	1.17.25	1.17. 0	1.16.33	1.16. 6	3505	805
1753	2472	1.16.37	1.16. 8	1.15.40	1.15.10	3538	774
1780	2443	1.15.45	1.15.19	1.14.47	1.14.14	3571	743
1807	2417	1.15. 0	1.14.27	1.13.53	1.13.18	3604	712
1834	2385	1.14.13	1.13.37	1.13. 0	1.12.23	3637	681
1861	2356	1.13.31	1.12.52	1.12.12	1.11.32	3670	650
1888	2328	1.12.52	1.12.11	1.11.29	1.10.45	3703	619
1915	2300	1.12.14	1.11.31	1.10.47	1.10. 1	3736	587
1942	2272	1.11.40	1.10.55	1.10 9	1. 9.21	3769	555
1969	2244	1.11.11	1.10.25	1. 9.37	1. 8.46	3802	523
1996	2216	1.10.48	1.10. 0	1. 9.10	1. 8.18	3835	491
2023	2188	1.10.28	1. 9.37	1. 8.47	1. 7.54	3867	459
2050	2160	1.10.13	1. 9.23	1. 8.31	1. 7.37	3900	427
2077	2132	1.10. 6	1. 9.15	1. 8.22	1. 7.28	3933	395
2104	2104	1.10. 2	1. 9.11	1. 8.18	1. 7.23	3966	363
A.	A.	Inclin.	Inclin.	Inclin.	Inclin.	A.	A.
		3°. 28'	3°. 33'	3°. 38'	3°. 43'	3°. 48'	



**H**Æ Tabulæ in tribus tantum momentis differunt ab illis, quæ in opere astronomiæ celeberrimi Domini *De La Lande* editæ sunt: *videlicet*,

I. In Tab. II. Motus annuus aliquantulum minor positus est, subtractis 1 minuto & 10 secundis a motu 100 annorum, & proportionaliter a reliquis annis.

II. Addidi novam æquationem D, quæ periodo 12 circiter annorum recurrit, & sine dubio excentricitati orbitæ ipsius Secundi Satellitis est tribuenda. Observationes diu indicaverunt, parvam inæqualitatem, 12 annorum periodo redeuntem, in motibus Secundi Satellitis locum habere; sed, cum valde parva sit, operæ pretium huc usque non duxi, nova æquatiuncula Tabulas reddere ampliores & calculum longiorem. Cum ramen, præcipue postremis hisce annis, ejus usus ad representandas melius observationes evidentior fuerit, eam nunc demum addidi. Si quis tamen eam negligere voluerit, calculus non multo magis errabit, si modo, hujus æquationis loco, integrum temporis minutum, vel 1'. 8'', ad epocas seu radices mediorum motuum in Tab. I. addatur.

III. Vitium harum Tabularum præcipue latet in Inclinatione orbitæ & loco motuque nodorum, nondum probe cognitis. Videtur hæc ultima periodus inclinationis fuisse paulo minor, & ipsa Inclinatio major quam antea. Sustinui itaque novam Tabulam Inclinationum, quæ est XII. & quam totam celeberrimo *Maraldo* debeo. Convenit hæc quidem paulo melius novissimis observationibus, neutiquam tamen omnes errores exhaurit. Plerumque enim moræ eclipsium breviores fuerunt quam admittunt etiam hæc Tabulæ. Quod aliqua pars hujus dissensus non tam mutatur inclinationi orbitæ sit tribuenda, quam melioribus & fortioribus, quibus jam utimur Telescopiis, inde concludo, quod moras eclipsium in ipsis nodis minores observemus, quam astronomi prioris seculi, & hujus etiam, ante annum 1760, a quo tempore excellentissimos tubos *Dollondianos* adhibent plerique astronomi ad observandos Satellites. Interim præcipuas observationes hujus Satellitis, postremis 12 annis habitas, cum hisce Tabulis comparavi, quas hisce adjungo.

Cum calculus sæpius in excessu peccet, tolli pro his annis pars errorum posset, auferendo ab epocis integrum circiter minutum: Sed præcedentium annorum observationes id non permittunt.

Observationes Eclipsium Secundi Satellitis, habitæ postremis hi  
12 Annis, a diversis Astronomis, inter se & cum Tabulis  
correctis comparatæ.

Tempus Observationis.		Error Calculi.
Ann. Mens.	D. H. M. S.	M. S.
1763.	Jan. 8. 10. 38. 20 Im.	0. 52 + Stockholm dub.
	19. 5. 3. 25 Em.	0. 28 + ibidem
	Mar. 6. 9. 2. 16 Em.	0. 14 + Clugny
	9. 2. 28 Em.	0. 0 Paris
	Aug. 2. 13. 49. 44 Im.	0. 12 — Wien
	13. 54. 15 Im.	0. 6 + Tyrnav.
	9. 15. 28. 54 Im.	0. 8 + Clugny
	27. 12. 35. 34 Em.	2. 33 — ibid. dub.
	Sept. 3. 12. 38. 18 Im.	0. 32 — ibid.
	15. 11. 44 Em.	1. 14 — ibid.
	12. 38. 18 Im.	0. 34 — Paris
	15. 11. 24 Em.	0. 56 — ibid.
	10. 15. 58. 48 Im.	0. 7 + Lund.
	16. 16. 50 Im.	0. 28 — Tyrnav.
	28. 9. 50. 48 —	0. 15 + Clugny
	10. 34. 19 —	0. 11 + Lund.
	Oct. 5. 13. 13. 26 —	0. 25 — Greifswald
	13. 29. 39 —	0. 13 + Tyrnav.
	12. 14. 58. 5 —	0. 5 + Greenwich
	15. 50. 42 —	0. 13 + Lund.
	23. 8. 4. 6 —	1. 0 + Tyrnav.
	Nov. 6. 13. 21. 23 —	0. 13 — Stockholm
	13. 15. 37. 39 —	0. 23 + Lund.
	15. 50. 10 —	0. 30 + Wien
	15. 55. 7 —	0. 22 + Tyrnav.
	20. 13. 21. 15 —	1. 20 + Barbados
	18. 12. 29 —	1. 20 + Lund.
	18. 30. 14 —	1. 2 + Tyrnav.
	24. 6. 46. 39 Im.	1. 20 + Clugny
	6. 46. 44 Im.	1. 13 + Paris
	Dec. 8. 10. 24. 55 Em.	0. 16 — Barbados
	15. 12. 59. 46 Em.	0. 19 — ibid.
1764.	Jan. 2. 12. 37. 22 Em.	0. 5 — Stockholm
	9. 10. 2. 8 —	0. 8 — Barbados
	16. 12. 37. 59 —	0. 8 — ibid.
	27. 9. 41. 53 —	0. 22 — Tyrnav.

Observationes comparatæ Secundi Satellitis Jovis.		
Tempus Observationis.		Error Calculi.
Ann. Menf.	D. H. M. S.	M. S.
1764.	Feb. 21. 6. 50. 42 Em.	0. 12 — Wien
	6. 55. 12 —	0. 7 + Tyrnav.
	28. 8. 34. 10 Em.	0. 25 — Clugny
	Mar. 6. 7. 5. 12 Em.	0. 28 + Barbados
	12. 15. 34 Em.	0. 46 + Stockholm
	24. 6. 53. 10 —	0. 46 + Tyrnav.
	31. 9. 28. 55 —	0. 0 Wien
	9. 33. 0 —	0. 36 + Tyrnav.
	Maj. 2. 8. 24. 47 —	0. 33 + Clugny
	9. 7. 51 Em.	0. 56 + Lund.
	9. 27. 4 Em.	1. 9 + Stockholm
	Sept. 3. 15. 47. 51 Im.	1. 19 + Tyrnav.
	Oct. 5. 15. 26. 12 Im.	0. 46 + Wien
	15. 33. 33 —	0. 13 + Stockholm
	12. 18. 8. 30 —	1. 5 + ibid.
	Dec. 15. 17. 13. 31 —	0. 35 + ibid.
	19. 6. 9. 22 Im.	1. 38 + Lund.
1765.	Jan. 20. 8. 45. 3 Em.	0. 2 + Tyrnav.
	8. 46. 13 Em.	0. 51 + Stockholm
	Feb. 3. 12. 56. 13 —	0. 50 + Paris
	14. 5. 55. 44 —	0. 54 + Stockholm
	21. 7. 32. 9 —	0. 24 + Clugny
	7. 32. 16 —	0. 15 + Paris
	28. 10. 11. 31 —	0. 26 + ibid.
	10. 11. 40 —	0. 17 + Clugny
	10. 55. 53 —	0. 7 + Greifswald
	11. 12. 28 —	0. 23 + Tyrnav.
	Mart. 7. 12. 50. 2 —	1. 46 + Clugny
	25. 7. 31. 21 —	1. 3 + ibid.
	7. 32. 15 —	0. 7 + Paris
	8. 34. 22 —	0. 55 + Stockholm
	Apr. 1. 11. 8. 18 —	0. 31 + Wien
	26. 8. 28. 3 —	0. 0 ibid.
	8. 33. 54 —	0. 49 + Stockholm
	Maj. 3. 10. 9. 52 Em.	0. 30 + Clugny
	11. 13. 3 Em.	0. 12 + Stockholm
	Sept. 29. 14. 49. 31 Im.	0. 23 + ibid.
	Nov. 7. 16. 54 0 Im.	1. 22 + Tyrnav.
	25. 11. 13. 32 Im.	0. 56 + ibid.



Observationes comparatæ Secundi Satellitis Jovis.			
Tempus Observationis.			Error Calculi.
Ann.	Menf.	D. H. M. S.	M. S.
1765.	Dec.	2. 12. 34. 37 Im.	0. 19 + Greenwich
		12. 43. 29 -	0. 45 + Clugny
		13. 26. 50 -	0. 51 + Lund.
		2. 13. 27. 40 Im.	0. 37 + Greifswald
		13. 43. 41 -	1. 27 + Tyrnav.
		16. 17. 43. 46 -	0. 54 + Clugny
1766.	Jan.	17. 43. 48 -	0. 50 + Paris
		10. 14. 30. 13 -	1. 32 + ibid.
		15. 31. 6 -	1. 35 + Tyrnav.
		21. 7. 2. 7 -	1. 29 + Lund.
		7. 19. 46 -	1. 36 + Upsala
		7. 22. 20 -	0. 42 + Stockholm
	Feb.	28. 8. 43. 27 Im.	0. 48 + Greenwich
		9. 54. 53 Im.	1. 33 + Stockholm dub.
		4. 11. 16. 36 Im.	2. 3 + Greenwich dub.
		11. 26. 52 Im.	1. 5 + Clugny
		22. 9. 45. 22 Em.	0. 25 + Wien
		9. 49. 17 Em.	1. 19 + Tyrnav.
	Mart.	9. 51. 53 -	0. 42 + Stockholm
		1. 12. 22. 45 -	0. 45 + Wien
		12. 27. 2 -	1. 36 + Upsala
		8. 14. 4. 36 -	1. 6 + Paris
		14. 4. 45 -	0. 59 + Clugny
		15. 5. 35 -	1. 3 + Tyrnav.
		19. 6. 46. 28 -	1. 4 + Lund.
		7. 3. 55 -	1. 4 + Tyrnav.
		7. 4. 13 -	1. 5 + Upsala
		7. 5. 23 -	1. 35 + Stockholm
	Apr.	26. 9. 38. 29 -	1. 7 + Wien
		10. 34. 3 -	1. 24 + Petersburg
		2. 12. 17. 42 -	1. 17 + Wien
		12. 21. 46 -	2. 21 + Upsala
		12. 21. 58 -	1. 50 + Tyrnav.
		12. 24. 18 -	1. 39 + Stockholm
1766.	Jun.	27. 9. 42. 21 -	0. 55 + ibid. dub.
		10. 30. 47 -	1. 32 + Petersburg
		30. 9. 11. 42 Em.	1. 37 + Tyrnav.

Observationes comparatæ Secundi Satellitis Jovis.				
Tempus Observationis.			Error Calculi.	
Ann.	Menf.	D. H. M. S.	M.S.	
1766.	Nov.	1. 14. 56. 1 Im.	1. 42 +	Clugny
		8. 17. 20. 36 -	0. 45 +	Greenwich
		17. 29. 56 -	0. 43 +	Clugny
		18. 30. 44 -	0. 49 +	Tyrnav.
	Dec.	3. 14. 18. 8 Im.	1. 15 +	Paris
		14. 19. 0 -	0. 25 +	Clugny
		15. 22. 15 -	0. 3 +	Stockholm
		10. 17. 31. 31 -	0. 51 +	Lund.
		17. 32. 48 -	0. 10 +	Greifswald
		17. 19. 9. 1 -	0. 11 -	Greenwich
		19. 16. 50 -	1. 16 +	Paris dub.
		11. 16. 0. 24 -	0. 42 +	ibid.
1767.	Jan.	18. 18. 22. 13 -	0. 1 -	Greenwich
		18. 30. 31 -	0. 57 +	Paris
		29. 10. 17. 56 -	0. 32 +	ibid.
		10. 18. 26 -	0. 4 +	Clugny
		11. 18. 38 -	0. 46 +	Tyrnav.
	Feb.	12. 15. 15. 5 -	0. 11 -	Greenwich
		15. 23. 55 -	0. 15 +	Paris
		19. 17. 57. 56 -	0. 22 +	Clugny
	Mart.	2. 9. 41. 1 Im.	0. 40 +	Greenwich
		20. 7. 7. 26 Em.	0. 53 +	Paris
	Apr.	3. 7. 11. 23 -	1. 8 +	Philadelphia
		13. 21. 57 -	1. 42 +	Upfala
		13. 23. 58 -	1. 21 +	Stockholm
		10. 14. 58. 18 -	1. 24 +	Clugny
		21. 7. 55. 56 -	0. 49 +	Tyrnav.
		28. 9. 32. 10 -	1. 2 +	Clugny
		9. 32. 26 -	0. 44 +	Paris
		10. 33. 55 -	0. 30 +	Upfala
		10. 34. 56 -	1. 9 +	Stockholm
		5. 11. 59. 29 -	1. 23 +	Greenwich
	Maj.	12. 9. 22 -	0. 46 +	Paris
		12. 9. 39 -	0. 31 +	Clugny
		30. 9. 6. 40 -	1. 32 +	Greenwich
		10. 17. 13 -	1. 11 +	Tyrnav.
	Jun.	6. 11. 42. 56 -	1. 1 +	Greenwich
		13. 9. 18. 6 Em.	0. 45 +	Philadelphia

Observationes comparatæ Secundi Satellitis Jovis.		
Tempus Observationis.		Error Calculi.
Ann. Menf.	D. H. M. S.	M. S.
1767. Dec.	4. 16. 45. 24. Im.	1. 23. + Stockholm
	11. 19. 13. 59 -	1. 29 + Tyrnav.
1768. Jan.	12. 18. 30. 15 -	0. 23. + ibid.
Feb.	6. 15. 20. 36 Im.	0. 9 + Upfala
	13. 17. 35. 2 Im.	0. 43 + Lund.
	17. 53. 23 -	0. 11 - Tyrnav.
	17. 53. 23 -	0. 8 + Upfala
	17. 55. 4 -	0. 7 + Stockholm
Mar.	2. 11. 31. 38 -	0. 4 + Geneve
	9. 14. 6. 25 -	0. 6 + ibid.
	14. 52. 48 -	0. 1 - Tyrnav.
	14. 54. 43 -	0. 3 + Stockholm
	16. 16. 17. 49 -	0. 4 - Greenwich
	16. 41. 20 -	0. 21 + Geneve
	17. 27. 53 -	0. 4 + Tyrnav.
	27. 8. 34. 28 -	0. 27 + Geneve
	9. 20. 44 -	0. 27 + Tyrnav.
	9. 22. 30 -	0. 40 + Stockholm dub.
Apr.	3. 10. 45. 4 Im.	1. 35 + Greenw. dub.
	10. 55. 34 Im.	0. 23 + Clugny
	11. 58. 45 Im.	0. 5 + Stockholm
	21. 7. 48. 21 Em.	0. 42 + Greenwich
Maj.	3. 12. 58. 15 Em.	1. 2 + ibid.
	13. 7. 51 -	0. 44 + Clugny
	14. 10. 38 -	0. 50 + Stockholm
	12. 10. 33. 9 -	0. 24 + Philadelphia
	23. 8. 34. 54 -	0. 42 + Tyrnav.
	30. 10. 52. 20 -	0. 10 - Lund.
	10. 53. 0 -	0. 9 - Berlin
	11. 9. 8 -	0. 29 + Tyrnav.
	11. 10. 54 -	0. 42 + Stockholm
Jul.	1. 10. 26. 16 Em.	0. 17 - Berlin
	10. 43. 3 Em.	0. 18 - Tyrnav.
1769. Mar.	10. 15. 10. 32 Im.	0. 0 Greenwich
	15. 19. 20 Im.	0. 30 + Clugny
Apr.	4. 12. 24. 5 -	0. 31 + ibid.
	13. 27. 1 -	0. 28 + Stockholm
	11. 9. 49. 14 -	0. 38 + Philadelphia



Observationes comparatae Secundi Satellitis Jovis.		
Tempus Observationis.		Error Calculi.
Ann. Menf.	D. H. M. S.	M. S.
1769.	Apr. 11. 14. 50. 43. -	0. 4 — Greenwich
	15. 0. 12. -	0. 25 — Clugny
	Maj. 6. 11. 51. 25 Im.	1. 1 + Greenwich
	24. 8. 50. 30 Em.	1. 30 — Paris dub.
	9. 50. 0. -	0. 4 — Tyrnav.
	9. 51. 40. -	0. 15 + Stockholm
	27. 11. 57. 39 Em.	0. 40 + Otaheite
	14. 37. 24. -	0. 9 + S. Joseph
	31. 12. 22. 52. -	0. 33 + Upfala
	12. 22. 59. -	0. 7 + Tyrnav.
	Jun. 21. 8. 53. 22. -	0. 28 — Otaheite
	11. 32. 14 Em.	0. 6 — S. Joseph
	Jul. 16. 8. 29. 45 Em.	0. 29 — ibid.
	8. 50. 29 Em.	0. 32 + Tyrnav.
1770.	Apr. 5. 14. 32. 7 Im.	0. 11 + Berlin
	Jun. 1. 10. 29. 9 Im.	0. 48 + Clugny
	26. 10. 54. 30 Em.	0. 5 — Tyrnav.
	10. 55. 23 Em.	0. 1 + Stockholm
	Jul. 28. 10. 27. 6 Em.	0. 4 + Tyrnav.
	Aug. 29. 9. 9. 35 Em.	0. 28 — Clugny
1771.	Apr. 6. 16. 11. 16 Im.	0. 22 + Tyrnav.
	Maj. 8. 16. 0. 10. -	0. 11 + ibid.
	Jun. 2. 12. 18. 41. -	0. 12 — Geneve
	Jul. 11. 14. 12. 17 Im.	0. 46 + Clugny
	22. 8. 49. 0 Em.	1. 0 + ibid.
	9. 51. 10. -	0. 16 — Tyrnav.
	Aug. 30. 11. 3. 20. -	0. 27 — Chittlehurst
	Oct. 26. 8. 4. 16 Em.	0. 57 — ibid.
1772.	Jun. 20. 15. 56. 38 Im.	0. 36 + Pekin
	Jul. 4. 13. 32. 50. -	0. 47 — Clugny
	13. 32. 56. -	0. 55 — Paris
	13. 52. 59. -	0. 21 + Perinaldo
	29. 10. 39. 39. -	0. 8 + Paris
	10. 39. 55. -	0. 6 — Clugny
	11. 22. 41. -	0. 35 + Land.
	11. 42. 32. -	0. 10 + Stockholm
	12. 31. 35. -	0. 10 + Petersburg

Observationes comparatæ Secundi Satellitis Jovis.			
Tempus Observationis.			Error Calculi.
Ann. Mens.	D. H. M. S.	M. S.	
1772.	Aug.	5. 13. 17. 26 -	0. 0 Paris
		13. 17. 36 -	0. 8 — Clugny
		14. 1. 19 -	0. 24 — Lund.
	14.	1. 25 -	0. 6 + Griefswald
		20. 19 Im.	0. 2 + Stockholm
		23. 9. 35. 19 Em.	0. 1 — Chislehurst
	11.	47. 10 -	0. 0 Stockholm
		27. 7. 39. 54 -	0. 1 — Pekin
		30. 14. 24. 23 -	0. 28 — Tynnav.
	Sept.	10. 7. 14. 0 -	0. 18 — Petersburg
		17. 9. 3. 35 Em.	0. 10 + Stockholm
		24. 11. 42. 12 -	0. 37 + ibid.
	28.	7. 35. 10 -	0. 35 + Pekin
		5. 10. 14. 21 -	0. 6 + ibid.
		12. 6. 17. 0 -	0. 21 + Tynnav.
	12.	52. 7 -	0. 41 + Pekin
		19. 8. 38. 46 -	0. 27 — Berlin
		8. 54. 47 -	0. 18 + Tynnav.
	8.	56. 34 -	0. 30 + Stockholm
		9. 45. 35 -	0. 32 + Petersburg
		Nov. 6. 10. 1. 50 -	0. 6 + Pekin
	Dec.	1. 7. 2. 20 -	0. 18 — ibid.
		15. 5. 31. 56 -	0. 13 — Tynnav.
1773.	Jan.	2. 6. 28. 14 Em.	0. 33 — Pekin
	Mai.	13. 15. 55. 31 Im.	1. 50 — ibid.
	Jun.	28. 13. 34. 0 -	1. 11 — Perinaldo
	Jul.	30. 13. 20. 12 -	1. 20 — ibid.
		14. 50. 38 -	1. 7 — Petersburg
	Aug.	6. 15. 37. 7 -	1. 5 — Clugny
		15. 37. 21 -	1. 21 — Paris
		15. 52. 3 -	1. 23 — Geneve
	15.	57. 14 -	0. 5 + Perinaldo dub.
		17. 15. 10. 54 -	0. 3 — Pekin
		24. 10. 29. 14 -	0. 54 — Geneve
	10.	35. 31 -	0. 32 — Perinaldo
		11. 17. 22 -	0. 47 — Stockholm
		31. 13. 8. 51 -	0. 32 — Geneve
	13.	14. 42 -	0. 16 + Perinaldo dub.
		13. 55. 20 -	0. 26 — Upsala

Observationes comparatæ Secundi Satellitis Jovis.			
Tempus Observationis.		Error Calculi.	
Ann. Mens.	D. H. M. S.	M. S.	
1773.	Sept.	7. 15. 55. 27 -	0. 5 - Perinaldo
		18. 8. 35. 16 -	0. 41 + Upsala dub.
		8. 37. 47 -	0. 10 - Stockholm dub.
		15. 10. 43 -	0. 22 + Pekin
		25. 10. 16. 36 Im.	1. 26 - Clugny dub.
	Oct.	6. 12. 26. 12 Em.	0. 4 - Pekin
		13. 7. 28. 37 -	0. 39 + Clugny
		8. 30. 24 -	0. 5 + Upsala
		8. 31. 35 -	0. 34 + Stockholm
		15. 5. 3 -	0. 34 + Pekin
		29. 10. 7. 6 -	1. 6 + Clugny
		10. 28. 33 -	0. 56 + Perinaldo
		11. 10. 2 -	1. 3 + Stockholm
		11. 59. 58 Em.	0. 19 + Petersburg
		24. 7. 3. 15 Em.	0. 39 + Pekin
		27. 13. 6. 56 -	0. 51 + Perinaldo
		31. 9. 40. 53 -	0. 52 + Pekin
	Nov.	7. 5. 43. 11 -	0. 25 + Tyrnav.
		14. 7. 39. 50 -	0. 35 + Perinaldo
		9. 10. 52 -	0. 12 + Petersburg
		28. 12. 44. 9 -	0. 17 + Geneve
	Dec.	23. 10. 29. 13 -	0. 43 + Stockholm
1774.	Jan.	10. 4. 50. 48 -	0. 2 + Upsala
		4. 52. 0 -	0. 30 + Stockholm
		4. 50. 16 -	0. 15 + Tyrnav.
	Feb.	18. 7. 1. 25 Em.	0. 13 + ibid.
		7. 3. 36 Em.	0. 1 + Stockholm
	Jul.	24. 12. 53. 28 Im.	2. 32 - Clugny
		15. 11. 47 Em.	3. 7 - ibid.
		13. 7. 55 Im.	2. 21 - Geneve
		13. 54. 21 Im.	2. 31 - Tyrnav.
	Aug.	11. 11. 35. 33 Em.	2. 9 - Petersb. dub.
		18. 11. 5. 28 Im.	1. 28 - Upsala
		11. 7. 14 Im.	1. 34 - Stockholm
		13. 23. 33 Em.	1. 7 - ibid.
		25. 12. 42. 40 Im.	1. 5 - Clugny
		12. 57. 45 Im.	1. 32 - Geneve
		13. 46. 11 Im.	1. 43 - Stockholm



Observationes comparatæ Secundi Satellitis Jovis.

Tempus Observationis.					Error Calculi.	
Ann.	Menf.	D. H. M. S.			M. S.	
1774.	Sept.	1.	16.	23.	5 -	1. 18 — Tyrnav.
		19.	10.	17.	8 -	1. 49 — Geneve
	Oct.	11.	2.	30	-	0. 55 — Tyrnav.
		3.	13.	36.	58 -	1. 36 — Geneve
			16.	21.	47 -	0. 9 — Tyrnav. dub.
			16.	25.	12 -	1. 35 — Stockholm
		14.	7.	20.	42 -	0. 18 — Clugny
			8.	21.	13 -	0. 5 + Tyrnav.
			8.	21.	58 -	0. 21 — Upfala
			8.	24.	4 -	0. 47 — Stockholm
	21.	10.	0.	27 Im.	0. 49 — Clugny	
		10.	14.	43 Im.	0. 27 — Geneve	
	Nov.	15.	10.	30. 5 Em.	0. 1 — Stockholm	
		22.	13.	6. 18 Em.	0. 14 + ibid.	
Dec.	3.	4.	58. 46 -	0. 18 — Upfala		
		4.	59. 39 -	0. 29 + Stockholm		
	24.	12.	43. 12 -	0. 13 — Upfala		
1775.	Feb.	19.	9.	27. 37 -	1. 40 + Tyrnav.	
	Mart.	15.	6.	43. 4 Em.	1. 5 + Stockholm	

Observationes comparatæ Secundi Satellitis Jovis, in Observatorio Regio Grenovicensi habitæ, Tubo Reflexionis hexapedali, & Tubo Dollondiano  $3\frac{1}{2}$  Pedum.

Tempus Observationis.		Tubus.		Error Cal.
		D. H. M. S.	Ped.	M. S.
1770.	Jun.	1. 10. 19. 57 I.	6	0. 46 +
		10. 20. 17	$3\frac{1}{2}$	0. 26 +
1771.	Aug.	30. 11. 2. 10 E. :	6	0. 26 +
		11. 2. 12 :	$3\frac{1}{2}$	0. 24 +
	Oct.	26. 8. 4. 13 E. :	6	1. 11 —
1772.	Jun.	2. 13. 42. 47 I.	6	0. 36 —
		13. 42. 25	$3\frac{1}{2}$	0. 14 —
	Jul.	4. 13. 22. 57 I.	6	0. 19 —
		13. 22. 14	$3\frac{1}{2}$	0. 24 +
	Oct.	19. 7. 44. 13 E.	6	0. 48 +
1773.	Aug.	31. 12. 45. 1 I.	6	0. 43 —
1774.	Jul.	24. 12. 43. 49 I. :	6	2. 10 —
	Sept.	26. 12. 33. 8 I.	6	1. 40 —
	Oct.	3. 15. 12. 35 I.	6	1. 10 —
		14. 7. 11. 23 I. :	6	1. 18 —
		21. 9. 51. 1 I. :	6	0. 40 —
	Dec.	24. 11. 31. 30 E. :	6	0. 58 +
1775.	Feb.	19. 6. 3. 58 I.	6	1. 14 +
		8. 16. 41 E.	6	2. 23 +
		8. 17. 18	$3\frac{1}{2}$	1. 46 +
	Mart.	23. 8. 9. 6 E. :	6	1. 1 +
		8. 9. 31 :	$3\frac{1}{2}$	0. 36 +
	Jul.	25. 15. 7. 58 I.	6	0. 56 —
	Aug.	26. 14. 50. 38 I.	6	1. 56 —
		14. 50. 7	$3\frac{1}{2}$	1. 25 —
	Sept.	27. 14. 40. 43 I.	$3\frac{1}{2}$	1. 27 —
	Oct.	29. 14. 30. 3 I.	$3\frac{1}{2}$	0. 39 —
	Nov.	16. 9. 0. 47 I. :	$3\frac{1}{2}$	0. 23 —
		23. 11. 36. 17 I.	$3\frac{1}{2}$	0. 32 —
1776.	Mart.	16. 7. 46. 49 E.	6	1. 32 +
		7. 47. 13	$3\frac{1}{2}$	1. 8 +

## EXEMPLUM CALCULI

Quæritur Tempus apparens Immerfionis Secundi Satellitis, quæ  
contigit Junii 1<sup>o</sup>. 1770?

		Epoch.				
		D. H. M. S.	A.	B.	C.	D.
1760. Tab. I.	---	1. 15. 2. 49	1173	914	905	963
10. Tab. II.	---	1. 14. 36. 47	3035	160	349	807
1770.		3. 5. 39. 36	4208 3600	74	254	770
			608			
Tab. III.	Maii 29.	6. 31. 38	124	377	340	34
Tab. IX. A. 732	} Equ.	+ 2. 43. 6	732	27 $\frac{1}{2}$	1 $\frac{1}{2}$	
Tab. X. B. 478 $\frac{1}{2}$		+ 0. 5. 7				
Tab. IV. A. 732	---	1. 14. 25. 6	81 $\frac{1}{2}$	478 $\frac{1}{2}$	595 $\frac{1}{2}$	804
Tab. V. C. 595 $\frac{1}{2}$	---	+ 28. 58. 2				
Tab. VI. D. 804	---	+ 0. 50. 2	650 $\frac{1}{2}$			
Tab. VII. Æquat. Act.						
5 in $\lambda$	---	+ 1. 53. 8				
Tab. VIII. A. correct.	650 $\frac{1}{2}$ Red.	+ 36				
1770. Jun.	1. 11. 31. 56					
Semi-mor. Eclipses	} - 1. 13. 48					
Tab. XIII. A. 650 $\frac{1}{2}$						
Incl. 3°. 25'. 86"	---					
1770. Jun.	1. 10. 18. 8					
Æquat. temporis ex	} + 2. 35. 3					
Ephem. Naut.						
Immer. 1770. Jun.	1. 10. 20. 43					
Quæ visa est Gren. Jun.	1. 10. 19. 57					
Error Calculi	---	0. 46 +				

Ex Tabula XII In-  
clinatio 3°. 25'. 86, &  
Correctio Numeri A,  
quando per eum quæ-  
ritur Semi-mora Eclip-  
ses in Tabula XIII,  
- 81 $\frac{1}{2}$ .



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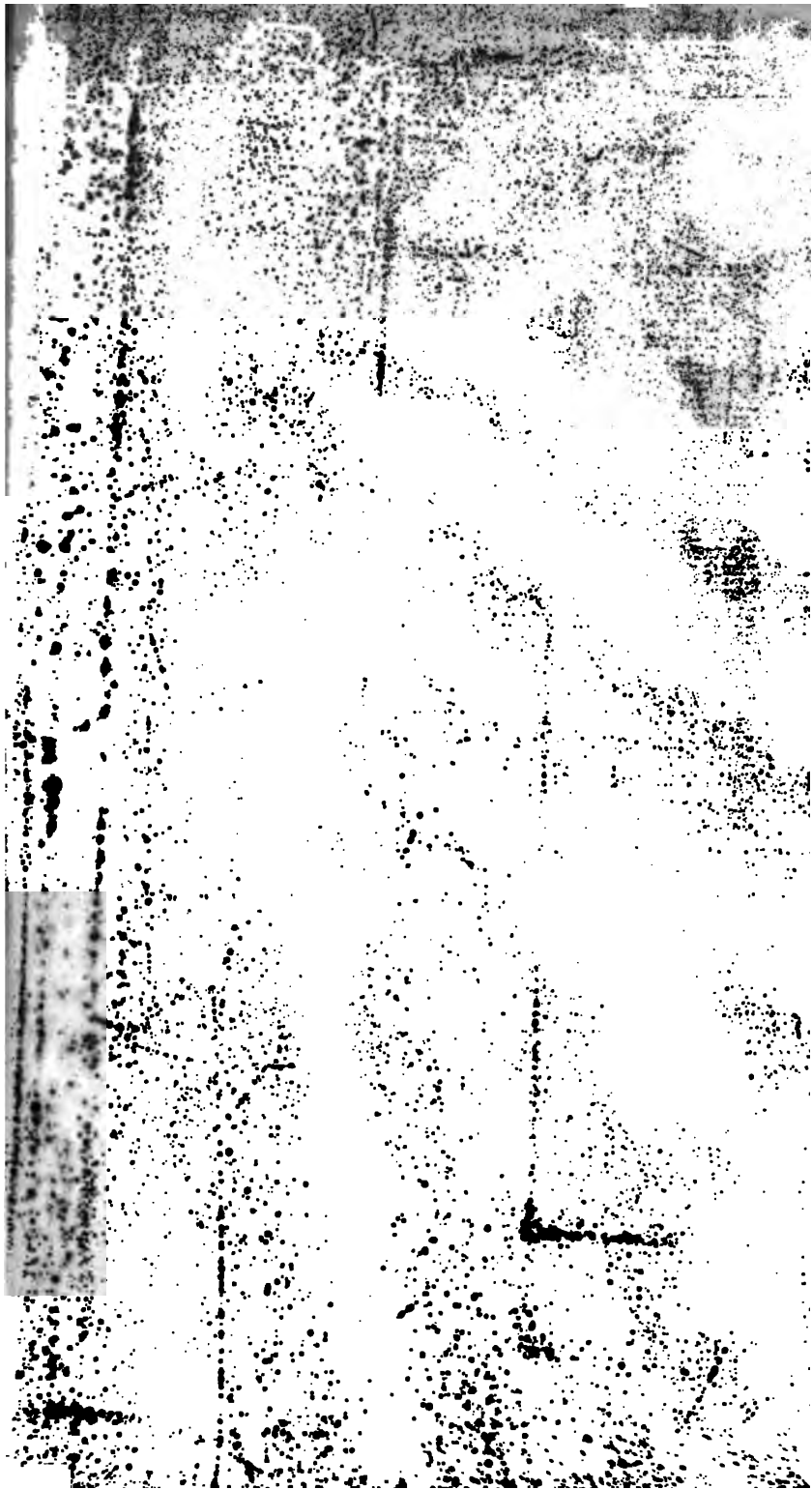
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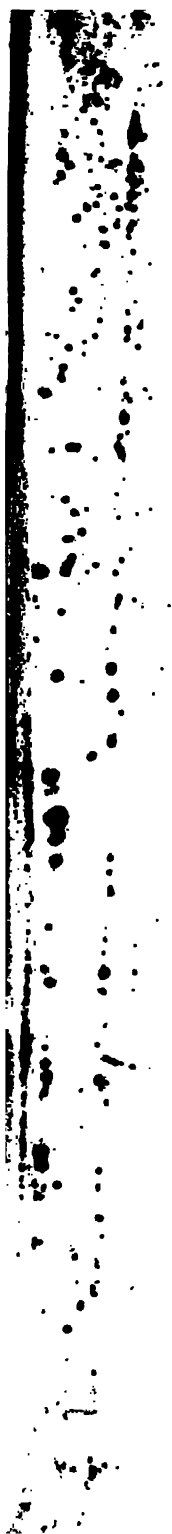






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